G'SECURE LABS
INFORMATION & CYBER SECURITY CONSULTING SERVICES

Accurate Detection.
Real Time Response.
Faster Recovery.

SMART MEDIC SOLUTION

Vulnerability Assessment and Penetration Testing Report

STRYKER, INDIA

stryker

August 5th, 2022

Vulnerability Assessment and Penetration Testing

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G' SECURE LABS

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Name/role	Company
Deepak	Stryker

Document Version:

Name of the Author	Version	Title	Date
Arunesh Mishra	1.0	Assessment Report	August 5th, 2022
Sajid Sheikh	1.0	Assessment Report	August 5th, 2022

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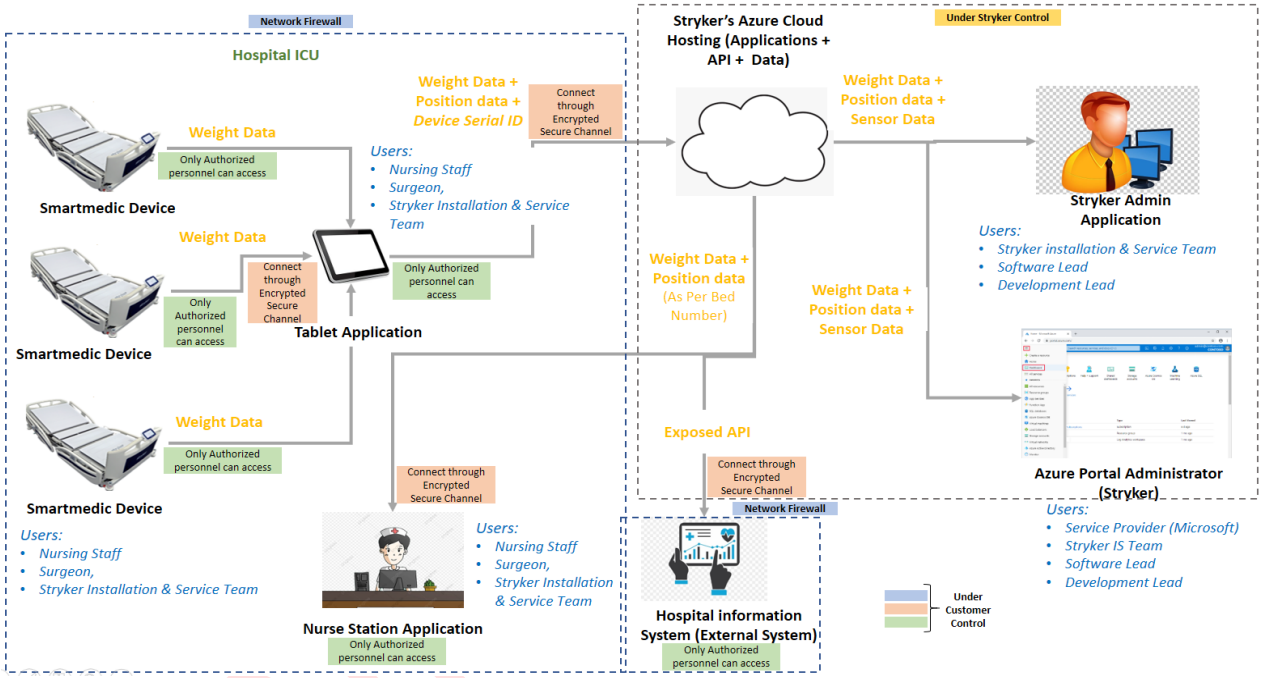
1. Summary

Stryker has assigned the task of carrying out vulnerability assessment and penetration testing of their Smart Medic Solution by G'Secure Labs team. This task was performed from January 1st, 2022 to August 5th, 2022. The version 1.0 detailed report described about each task and our findings on basis of last build of the solution.

2. Assessment Scope

Vulnerability assessment and penetration testing for Smart Medic Solution was carried for Stryker at following locations – INDIA.



Assets in Scope:

Sr. No.	Smart Medic Components Under Scope
1	Nurse Station Application
2	Smart Medic Azure Applications
3	Smart Medic Tablet Applications
4	Smart Medic Tablet Device
Sr. No.	**Urls and Apis Links Related to NSA and Azure Applications**
1	https://smartmedic-testing.com
2	https://api.smartmedic-testing.com
3	https://admin.smartmedic-testing.com
Sr. No.	**Smart Medic Tablet Applications**
1	ICU_V1.0.9-release.apk
2	Kiosk_V1.0.9-release.apk
3	Management_V1.0.11-release.apk
4	Settings_V1.0.9-release.apk
5	SoftwareUpgrade_V1.0.12-release.apk

3. Assessment Summary

3.1 Highlights of Assessment & Testing

G'Secure Labs conducted various scans and tests under authorized white Box test mode on all public & private facing critical assets in the given infrastructure.
The scan report contains the details of the affected applications, systems and assets only and the details of the assets marked as 'safe' has been omitted for the brevity and preciseness of the report. G'Secure Labs used IAST to reduce false positives.
We recommend to address the test reports marked under severity levels 'Critical', 'High' and medium at the earliest and the other severity levels can be taken for discussion and remediation planning. The tests revealed that notable vulnerabilities.

Smart Medic Tablet Device and Apps

- External Storage Accessing

Smart Medic Web Applications

- Strict transport security not enforced
- Email addresses disclosed
- Open Ports Information gathered
- TLS certificate

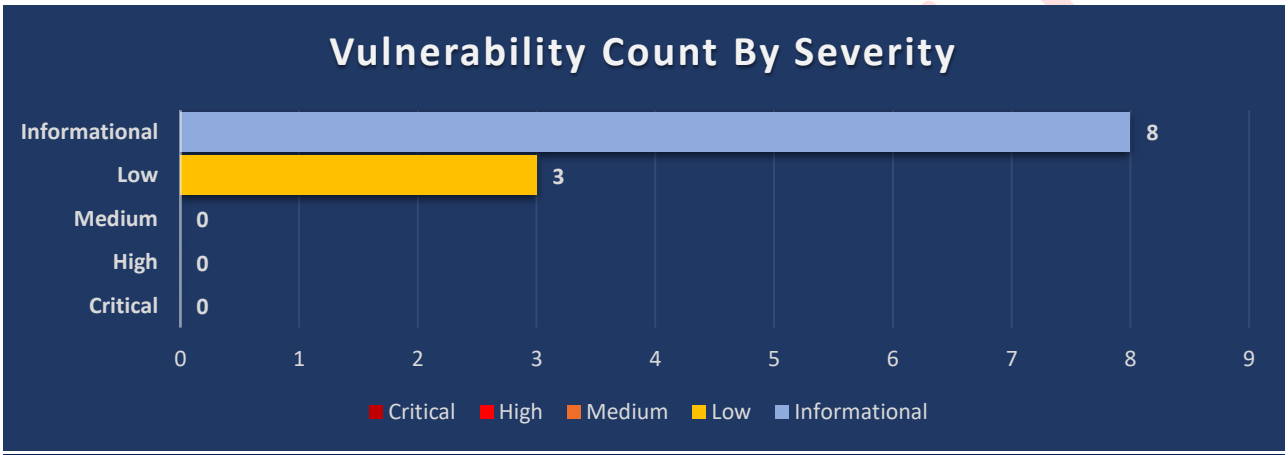
Smart Medic Tablet Apps and Tablet Device

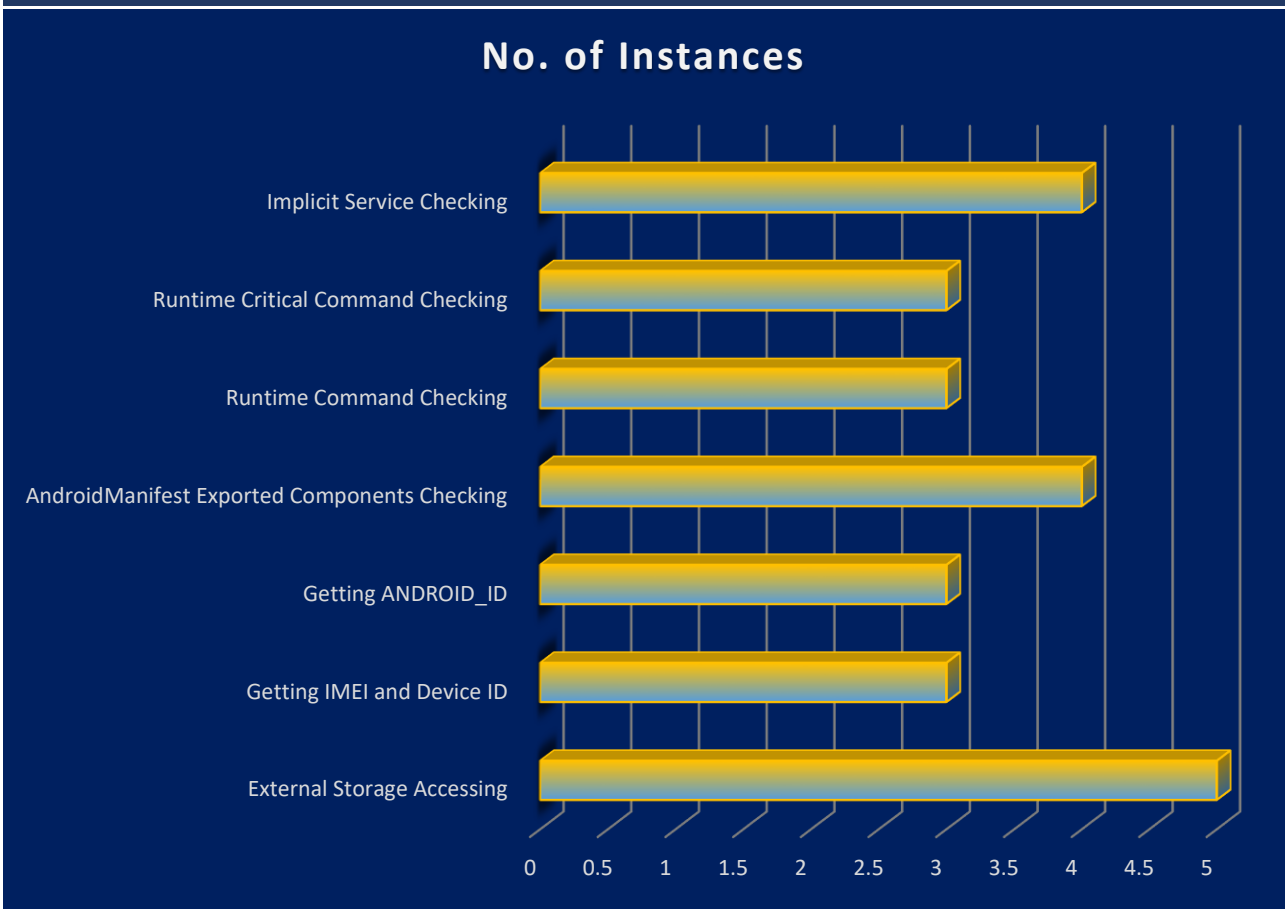
4. Technical Report of "Smart Medic Tablet Apps and Tablet Device" Project Vulnerability Assessment

The section uncovers the security checkups, which presents the findings of a security assessment conducted in Smart Medic Tablet Apps (Application Package 1.0.13) and Tablet Device (Testing device no. 1.0.13) 

.

This section reveals the exact areas where your Smart Medic Solution project could be exposed to security threats, areas needed to be improved and it will recommend the solutions to address such risks.





4.1 Smart Medic Tablet App: ICU_V1.0.9-release.apk

Platform: Android
Package Name: com.stryker.icuflow
Package Version Name: 1.0.9
Package Version Code: 9
Min Sdk: 29
Target Sdk: 29
MD5 : 6e8ef0e63d74a3ed1c6afa6a7475655b
SHA1 : 42cef65a8483bfbf6b3d6515ab368d9e5e23cfba
SHA256: 613a8f1a2f28ba87a363a7159b0f91f76d688dbff2950e68ccfe23a38f24ca92
SHA512:
8cdc68ba425fe1ea0959cb2b9bd5d6a97ed46dd3ebe55948e0929be5e13b01763503f2ba9663b97b6da0ba9167453d4e63476d78beed717cc6f4d6b76ec33d28
Analyze Signature:
d4c5105e3d737915d012a82f13ff13836695445bf6b1c24c34b12cfb7ca703429384d4e79129ad54d5eac24ed47818fe821411fa99bf259a7b1613e630ace720

Informational Issues:

External Storage Accessing:

External storage access found (Remember DO NOT write important files to external storages):

```
=> Landroidx/core/content/FileProvider;->parsePathStrategy(Landroid/content/Context;
   Ljava/lang/String;)Landroidx/core/content/FileProvider$PathStrategy; (0xcc) --->
   Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=> Landroidx/core/os/EnvironmentCompat;->getStorageState(Ljava/io/File;)Ljava/lang/String;
   (0x34) --->
   Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=> Lch/qos/logback/core/android/AndroidContextUtil;-
   >getExternalStorageDirectoryPath()Ljava/lang/String; (0x0) --->
   Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=> Lch/qos/logback/core/android/AndroidContextUtil;-
   >getMountedExternalStorageDirectoryPath()Ljava/lang/String; (0x2e) --->
   Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=> Lcom/stryker/icuflow/utils/Utils$Companion;->getFilePath()Ljava/lang/String; (0x24) --->
   Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
```

<Sensitive_Information> Getting IMEI and Device ID:

This app has code getting the "device id(IMEI)" but there are problems with this "TelephonyManager.getDeviceId()" approach.

1.Non-phones: Wifi-only devices or music players that don't have telephony hardware just don't have this kind of unique identifier.

2.Persistence: On devices which do have this, it persists across device data wipes and factory resets. It's not clear at all if,
in this situation, your app should regard this as the same device.

3.Privilege:It requires READ_PHONE_STATE permission, which is irritating if you don't otherwise use or need telephony.

4.Bugs: We have seen a few instances of production phones for which the implementation is buggy and returns garbage, for example

zeros or asterisks.
If you want to get an unique id for the device, we suggest you use "Installation" framework in the following article.
Please check the reference: http://android-developers.blogspot.tw/2011/03/identifying-app-installations.html

```
=> Landroidx/core/telephony/TelephonyManagerCompat;-
>getImei(Landroid/telephony/TelephonyManager;)Ljava/lang/String; (0xb0)
---> Landroid/telephony/TelephonyManager;->getDeviceId()Ljava/lang/String;
```

<Sensitive_Information> Getting ANDROID_ID:

This app has code getting the 64-bit number "Settings.Secure.ANDROID_ID".
ANDROID_ID seems a good choice for a unique device identifier. There are downsides: First, it is not 100% reliable on releases of Android prior to 2.2 (Froyo).
Also, there has been at least one widely-observed bug in a popular handset from a major manufacturer, where every instance has
the same ANDROID_ID.
If you want to get an unique id for the device, we suggest you use "Installation" framework in the following article.
Please check the reference: http://android-developers.blogspot.tw/2011/03/identifying-app-installations.html

```
=> Lcom/stryker/icuflow/utils/AppUtils$Companion;-
>getProvisionedId(Landroid/content/Context;)Ljava/lang/String; (0x16) --->
Landroid/provider/Settings$Secure;->getString(Landroid/content/ContentResolver;
Ljava/lang/String;)Ljava/lang/String;
```

4.2 Smart Medic Tablet App: Kiosk_V1.0.9-release.apk

Platform: Android
Package Name: com.stryker.kioskmode
Package Version Name: 1.0.9
Package Version Code: 9
Min Sdk: 29
Target Sdk: 29
MD5 : 39253543da610a59648f530a79bd7072
SHA1 : 72e9e7918b4cc0550208a3bd060713b16e561f71
SHA256: c7444b5fcbfd698547b954ef6bdf79adb63b324395e863b6d94bb72903522dcd
SHA512:
6ff93c5809a28eaefa13b7711abec0e23c03e3635b08b5cbc64b43ca29116ed1b86327852ff0c6db1c89d93f4cbda480dde736691651bf2765d92fe755011926
Analyze Signature:
22c0716850d758501151d10fc77097d1e316f392e5d9d2fafb16acac817a3b1f639cb032f71973eb7d88873b4d8ea1e5e05d71891af394af12502800a072abc3

Low Issues:

<Command> Runtime Command Checking:

This app is using critical function 'Runtime.getRuntime().exec("...")'.
Please confirm these following code secions are not harmful:

```
=>Lcom/stryker/kioskmode/utils/ExtensionsKt;->performSuCommand(Ljava/lang/String;)V
    (0x34) --->
    Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
=> Lcom/stryker/kioskmode/ui/eula/EulaActivity;->disableGoogleSearch()V (0xc) --->
    Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
=> Lcom/stryker/kioskmode/ui/eula/EulaActivity;->resetSystemConnectionSetting()V (0x10) --->
    Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
=> Lcom/stryker/kioskmode/ui/splash/SplashActivity;->grantPermission()V (0x14) --->
    Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
```

<Command> Runtime Critical Command Checking:

Requesting for "root" permission code sections 'Runtime.getRuntime().exec("su")' found (Critical but maybe false positive):

```
=>Lcom/stryker/kioskmode/utils/ExtensionsKt;->performSuCommand(Ljava/lang/String;)V
    (0x34) --->
    Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
=> Lcom/stryker/kioskmode/ui/eula/EulaActivity;->resetSystemConnectionSetting()V (0x10) --->
    Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
=> Lcom/stryker/kioskmode/ui/splash/SplashActivity;->grantPermission()V (0x14) --->
    Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
```

<Implicit_Intent> Implicit Service Checking:

To ensure your app is secure, always use an explicit intent when starting a Service and DO NOT declare intent filters for your services. Using an implicit intent to start a service is a security hazard because you cannot be certain what service will respond to the intent, and the user cannot see which service starts.

Reference: http://developer.android.com/guide/components/intents-filters.html#Types

```
=> com.stryker.kioskmode.service.KioskService
```

Informational Issues:

External Storage Accessing:

External storage access found (Remember DO NOT write important files to external storages):

```
=> Landroidx/core/content/FileProvider;->parsePathStrategy(Landroid/content/Context;
    Ljava/lang/String;)Landroidx/core/content/FileProvider$PathStrategy; (0xcc) --->
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>Landroidx/core/os/EnvironmentCompat;->getStorageState(Ljava/io/File;)Ljava/lang/String;
    (0x34) --->
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>Lch/qos/logback/core/android/AndroidContextUtil;-
    >getExternalStorageDirectoryPath()Ljava/lang/String; (0x0) --->
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>Lch/qos/logback/core/android/AndroidContextUtil;-
    >getMountedExternalStorageDirectoryPath()Ljava/lang/String; (0x2e) --->
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>Lcom/stryker/kioskmode/utils/ExtensionsKt;-
    >readAppListFileOnInternalStorage()Ljava/lang/String; (0x4) --->
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
```

```
=>Lcom/stryker/kioskmode/utils/ExtensionsKt;-
    >writeAppListFileOnInternalStorage(Ljava/lang/String;)V (0x4) --->
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=> Lcom/stryker/kioskmode/utils/Utils$Companion;->getFilePath()Ljava/lang/String; (0x24) --->
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
```

AndroidManifest Exported Components Checking:

Found "exported" components(except for Launcher) for receiving outside applications' actions (AndroidManifest.xml).

These components can be initilized by other apps. You should add or modify the attribute to [exported="false"] if you don't want to.

You can also protect it with a customized permission with "signature" or higher protectionLevel and specify in "android:permission" attribute.

```
service => com.stryker.kioskmode.service.KioskService
```

<Sensitive_Information> Getting ANDROID_ID:

This app has code getting the 64-bit number "Settings.Secure.ANDROID_ID".

ANDROID_ID seems a good choice for a unique device identifier. There are downsides: First, it is not 100% reliable on releases of Android prior to 2.2 (Froyo).

Also, there has been at least one widely-observed bug in a popular handset from a major manufacturer, where every instance has the same ANDROID_ID.

If you want to get an unique id for the device, we suggest you use "Installation" framework in the following article.

Please check the reference: http://android-developers.blogspot.tw/2011/03/identifying-app-installations.html

```
=>Lcom/google/firebase/crashlytics/internal/common/CommonUtils;-
    >isEmulator(Landroid/content/Context;)Z (0xc) --->
    Landroid/provider/Settings$Secure;->getString(Landroid/content/ContentResolver;
    Ljava/lang/String;)Ljava/lang/String;
```

4.3 Smart Medic Tablet App: Management_V1.0.11-release.apk

Platform: Android
Package Name: com.stryker.management
Package Version Name: 1.0.11
Package Version Code: 11
Min Sdk: 29
Target Sdk: 29
MD5 : 4cf88538e291c4211b3069ca3d661700
SHA1 : 41d7a8ea5169ae5662ef85a531effb6cb3863241
SHA256: 9ccff517bdab6302fd9b78c3772f94667eaf3d456c9701bb89730cec519d7ae9
SHA512:
701647a29f2a3d56271aab7a16827d89fc5a0eef99b78c341818794368072b819201816f86be61df5f6cca8c00c8947d99a1450adb4b5b76d8daa6808771f846
Analyze Signature:
28a658c16cc179f3d058308a57c0af4df6284bc8581b1c7acc604ef0fef5a1cc0a98fed9c578f6cefc380cee08dcff253dd2c07eae5cbed5a324cd3b444f66fc

Low Issues:

<Implicit_Intent> Implicit Service Checking:

To ensure your app is secure, always use an explicit intent when starting a Service and DO NOT declare intent filters for your services. Using an implicit intent to start a service is a security hazard because you cannot be certain what service will respond to the intent, and the user cannot see which service starts.

Reference: http://developer.android.com/guide/components/intents-filters.html#Types

```
=> com.stryker.management.Services.MyBluetoothService
=> com.stryker.management.Services.ServiceForInternetCheck
=> com.stryker.management.Services.ServiceForInternetCheck
=> com.stryker.management.Services.ManagementService
```

Informational Issues:

External Storage Accessing:

External storage access found (Remember DO NOT write important files to external storages):

```
=> Landroidx/core/content/FileProvider;->parsePathStrategy(Landroid/content/Context;
   Ljava/lang/String;)Landroidx/core/content/FileProvider$PathStrategy; (0xcc) --->
   Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>Landroidx/core/os/EnvironmentCompat;->getStorageState(Ljava/io/File;)Ljava/lang/String;
   (0x34) --->
   Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>Lch/qos/logback/core/android/AndroidContextUtil;-
   >getExternalStorageDirectoryPath()Ljava/lang/String; (0x0) --->
   Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>Lch/qos/logback/core/android/AndroidContextUtil;-
   >getMountedExternalStorageDirectoryPath()Ljava/lang/String; (0x2e) --->
   Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
```

AndroidManifest Exported Components Checking:

Found "exported" components(except for Launcher) for receiving outside applications' actions (AndroidManifest.xml).

These components can be initilized by other apps. You should add or modify the attribute to [exported="false"] if you don't want to.

You can also protect it with a customized permission with "signature" or higher protection Level and specify in "android:permission" attribute.

```
service => com.stryker.management.Services.MyBluetoothService
service => com.stryker.management.Services.ServiceForInternetCheck
service => com.stryker.management.Services.ManagementService
```

<Sensitive_Information> Getting IMEI and Device ID:

This app has code getting the "device id(IMEI)" but there are problems with this "TelephonyManager.getDeviceId()" approach.

1. Non-phones: Wifi-only devices or music players that don't have telephony hardware just don't have this kind of unique identifier.

2. Persistence: On devices which do have this, it persists across device data wipes and factory resets. It's not clear at all if, in this situation, your app should regard this as the same device.
3. Privilege:It requires READ_PHONE_STATE permission, which is irritating if you don't otherwise use or need telephony.
4. Bugs: We have seen a few instances of production phones for which the implementation is buggy and returns garbage, for example zeros or asterisks.

If you want to get an unique id for the device, we suggest you use "Installation" framework in the following article.

Please check the reference: http://android-developers.blogspot.tw/2011/03/identifying-app-installations.html

```
=>Landroidx/core/telephony/TelephonyManagerCompat;->getImei(Landroid/telephony/TelephonyManager;)Ljava/lang/String; (0xb0)
---> Landroid/telephony/TelephonyManager;->getDeviceId()Ljava/lang/String;
```

4.4 Smart Medic Tablet App: Settings_V1.0.9-release.apk

Platform: Android
Package Name: com.stryker.settings
Package Version Name: 1.0.9
Package Version Code: 9
Min Sdk: 29
Target Sdk: 29
MD5 : e20051c1f5e179018100ae938304049e
SHA1 : c4b20ad36559431ae46e93798245d2f6dbdf88d2
SHA256: 865ee6886ca60b421d22409fe4cd943de4fec96d0ade469ffc196c9ce0f5a3fb
SHA512:
dccae5321dd721a70346e96d94f0fc93c7e02bc77a6e67e79a1ba1e48edba80a49c0856b97509013f963960ebc5757e7c11d4d862f19eaf64b76c0cb9551d640
Analyze Signature:
cc26ff36d3aa05ccbb856f7d431519c766022b915a75a5237cca93d391a2afee6a30ff2d259629affb56b0c9d2c641768447bac5b734c45449afec9117736ba7

Low Issues:

<Command> Runtime Command Checking:

This app is using critical function 'Runtime.getRuntime().exec("...")'.

Please confirm these following code secions are not harmful:

```
=>Lcom/stryker/settings/utils/Utils$Companion;->performSuCommand(Ljava/lang/String;)V (0x36) --->
Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
=> Lcom/stryker/settings/utils/WifiSettings;->getTetheringConfig()Lkotlin/Pair; (0x10) --->
Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
=>Lcom/stryker/settings/utils/WifiSettings;->getWifiConfig(Landroid/content/Context;)Lkotlin/Pair; (0x24) --->
Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
=>Lcom/stryker/settings/utils/WifiSettings;->getWifiConfig(Landroid/content/Context;)Lkotlin/Pair; (0x40) --->
Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
```

```
=>Lcom/stryker/settings/ui/diagnostics/DiagnosticsViewModel$logCatOutput$1;-
>invokeSuspend(Ljava/lang/Object;)Ljava/lang/Obj
ect; (0xb0) ---> Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
=>Lcom/stryker/settings/ui/diagnostics/DiagnosticsViewModel$logCatOutput$1;-
>invokeSuspend(Ljava/lang/Object;)Ljava/lang/Obj
ect; (0xde) ---> Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
=>Lcom/stryker/settings/ui/connections/ConnectionsActivity;->checkOverlayPermission()V
(0x1e) --->
Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
```

<Command> Runtime Critical Command Checking:

Requesting for "root" permission code sections 'Runtime.getRuntime().exec("su")' found (Critical but maybe false positive):

```
=>Lcom/stryker/settings/utils/Utils$Companion;->performSuCommand(Ljava/lang/String;)V
(0x36) --->
Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
=>Lcom/stryker/settings/utils/WifiSettings;-
>getWifiConfig(Landroid/content/Context;)Lkotlin/Pair; (0x24) --->
Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
```

<Implicit_Intent> Implicit Service Checking:

To ensure your app is secure, always use an explicit intent when starting a Service and DO NOT declare intent filters for your services. Using an implicit intent to start a service is a security hazard because you cannot be certain what service will respond to the intent, and the user cannot see which service starts.

Reference: http://developer.android.com/guide/components/intents-filters.html#Types

```
=> com.stryker.settings.services.SettingsService
```

Informational Issues:

External Storage Accessing:

External storage access found (Remember DO NOT write important files to external storages):

```
=> Landroidx/core/content/FileProvider;->parsePathStrategy(Landroid/content/Context;
Ljava/lang/String;)Landroidx/core/content/FileProvider$PathStrategy; (0xcc) --->
Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>Landroidx/core/os/EnvironmentCompat;->getStorageState(Ljava/io/File;)Ljava/lang/String;
(0x34) --->
Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>Lch/qos/logback/core/android/AndroidContextUtil;-
>getExternalStorageDirectoryPath()Ljava/lang/String; (0x0) --->
Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>Lch/qos/logback/core/android/AndroidContextUtil;-
>getMountedExternalStorageDirectoryPath()Ljava/lang/String; (0x2e) --->
Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=> Lcom/stryker/settings/utils/Utils$Companion;->getFilePath()Ljava/lang/String; (0x24) --->
Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
```

AndroidManifest Exported Components Checking:

Found "exported" components(except for Launcher) for receiving outside applications' actions (AndroidManifest.xml).

These components can be initilized by other apps. You should add or modify the attribute to [exported="false"] if you don't want to.

You can also protect it with a customized permission with "signature" or higher protectionLevel and specify in "android:permission" attribute.

```
service => com.stryker.settings.services.SettingsService
```

<Sensitive_Information> Getting ANDROID_ID:

This app has code getting the 64-bit number "Settings.Secure.ANDROID_ID".

ANDROID_ID seems a good choice for a unique device identifier. There are downsides: First, it is not 100% reliable on releases of Android prior to 2.2 (Froyo).

Also, there has been at least one widely-observed bug in a popular handset from a major manufacturer, where every instance has the same ANDROID_ID.

If you want to get an unique id for the device, we suggest you use "Installation" framework in the following article.

Please check the reference: http://android-developers.blogspot.tw/2011/03/identifying-app-installations.html

```
=>Lcom/google/firebase/crashlytics/internal/common/CommonUtils;-
    >isEmulator(Landroid/content/Context;)Z (0xc) --->
    Landroid/provider/Settings$Secure;->getString(Landroid/content/ContentResolver;
    Ljava/lang/String;)Ljava/lang/String;

=>Lcom/stryker/settings/utils/TabletVersionUtils$Companion;-
    >getProvisionedId(Landroid/content/Context;)Ljava/lang/String;
    (0x16) ---> Landroid/provider/Settings$Secure;->getString(Landroid/content/ContentResolver;
    Ljava/lang/String;)Ljava/lang/String;
```

4.5 Smart Medic Tablet App: SoftwareUpgrade_V1.0.12-release.apk

Platform: Android
Package Name: com.stryker.softwareupgrade
Package Version Name: 1.0.12
Package Version Code: 12
Min Sdk: 29
Target Sdk: 29
MD5 : c438308f8469ccd12a63b1bca43b23ec
SHA1 : 058d046c0bbe60b623dd0444d8fb349eca94a96b
SHA256: 58713b8091e501d49669d7e63c450edb5bc5178923921c4352d530eeae611c64
SHA512:
ec2a87503fc3972f51463edc89bd881374e4d5d7c99eb6103e1d31ab28b52b20ab79f0999e5212ba05e30f30d92b383a5791029bd36b320b8e1e55d8bf45f311
Analyze Signature:
66b1be1c4f26088224ee7ee62d72fa1e84b3efa07e924cf55edc39bd3ab0b055e65c532609386b91e2a0cca719b24d211aefe195972b0004f4ecd9f7d41cd317

Low Issues:

<Command> Runtime Command Checking:

This app is using critical function 'Runtime.getRuntime().exec("...")'.
Please confirm these following code secions are not harmful:

```
=>Lcom/stryker/softwareupgrade/services/CheckIsAllServiceRunning;-
    >performAdbCommand(Ljava/lang/String;)V (0x14) --->
    Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
=>Lcom/stryker/softwareupgrade/ui/SoftwareUpgradeActivity;-
    >androidSilentInstallApk(Ljava/lang/String; Ljava/lang/String;)V
    (0x74) ---> Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
```

<Command> Runtime Critical Command Checking:

Requesting for "root" permission code sections 'Runtime.getRuntime().exec("su")' found (Critical but maybe false positive):

```
=>Lcom/stryker/softwareupgrade/services/CheckIsAllServiceRunning;-
    >performAdbCommand(Ljava/lang/String;)V (0x14) --->
    Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
=>Lcom/stryker/softwareupgrade/ui/SoftwareUpgradeActivity;-
    >androidSilentInstallApk(Ljava/lang/String; Ljava/lang/String;)V
    (0x74) ---> Ljava/lang/Runtime;->exec(Ljava/lang/String;)Ljava/lang/Process;
```

<Implicit_Intent> Implicit Service Checking:

To ensure your app is secure, always use an explicit intent when starting a Service and DO NOT declare intent filters for your services. Using an implicit intent to start a service is a security hazard because you cannot be certain what service will respond to the intent, and the user cannot see which service starts.
Reference: http://developer.android.com/guide/components/intents-filters.html#Types

```
=> com.stryker.softwareupgrade.services.SoftwareUpgradeService
```

Informational Issues:

External Storage Accessing:

External storage access found (Remember DO NOT write important files to external storages):

```
=> Landroidx/core/content/FileProvider;->parsePathStrategy(Landroid/content/Context;
    Ljava/lang/String;)Landroidx/core/content/FileProvider$PathStrategy; (0xcc) --->
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>Landroidx/core/os/EnvironmentCompat;->getStorageState(Ljava/io/File;)Ljava/lang/String;
    (0x34) --->
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>Lch/qos/logback/core/android/AndroidContextUtil;-
    >getExternalStorageDirectoryPath()Ljava/lang/String; (0x0) --->
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>Lch/qos/logback/core/android/AndroidContextUtil;-
    >getMountedExternalStorageDirectoryPath()Ljava/lang/String; (0x2e) --->
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>Lcom/stryker/settings/utils/Utils$Companion;-
    >getFilePath(Landroid/content/Context;)Ljava/lang/String; (0x22) --->
```

```
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=> Lcom/stryker/settings/utils/Utils$Companion;->appendLog(Ljava/lang/String;)V (0x12) --->
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=> Lcom/stryker/settings/utils/Utils$Companion;->appendLog(Ljava/lang/String;)V (0x4a) --->
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>Lcom/stryker/softwareupgrade/utils/UploadLogsController;-
    >downloadSwApkFromBlob(Lcom/stryker/softwareupgrade/utils/Constan
    ts$FMFileDownloadListener; Z Ljava/lang/String; Ljava/lang/String; Z Ljava/lang/String; Z)V
    (0x40) --->
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>Lcom/stryker/softwareupgrade/utils/UploadLogsController;-
    >swApkFromBlobFileSize(Lcom/stryker/softwareupgrade/utils/Constan
    ts$FMFileDownloadListener; Z Ljava/lang/String; Ljava/lang/String;)V (0x22) --->
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>Lcom/stryker/softwareupgrade/services/SoftwareUpgradeService;-
    >callbackIndividualFirmwareUpdate(Ljava/lang/Boolean;
    Ljava/lang/String; Ljava/lang/Boolean; Ljava/lang/String; Z)V (0xbe) --->
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
=>    Lcom/stryker/softwareupgrade/ui/SoftwareUpgradeActivity;->callback(Ljava/lang/Boolean;
    Ljava/lang/String;
    Ljava/lang/Boolean;)V (0x66) ---> Landroid/os/Environment;-
    >getExternalStorageDirectory()Ljava/io/File;
=>Lcom/stryker/softwareupgrade/ui/SoftwareUpgradeActivity;-
    >callbackIndividualFirmwareUpdate(Ljava/lang/Boolean;
    Ljava/lang/String; Ljava/lang/Boolean; Ljava/lang/String; Z)V (0x24) --->
    Landroid/os/Environment;->getExternalStorageDirectory()Ljava/io/File;
```

AndroidManifest Exported Components Checking:

Found "exported" components(except for Launcher) for receiving outside applications' actions (AndroidManifest.xml).

These components can be initilized by other apps. You should add or modify the attribute to [exported="false"] if you don't want to.

You can also protect it with a customized permission with "signature" or higher protection Level and specify in "android:permission" attribute.

```
service => com.stryker.softwareupgrade.services.SoftwareUpgradeService
```

<Sensitive_Information> Getting IMEI and Device ID:

This app has code getting the "device id(IMEI)" but there are problems with this "TelephonyManager.getDeviceId()" approach.

1.Non-phones: Wifi-only devices or music players that don't have telephony hardware just don't have this kind of unique identifier.

2.Persistence: On devices which do have this, it persists across device data wipes and factory resets. It's not clear at all if, in this situation, your app should regard this as the same device.

3.Privilege:It requires READ_PHONE_STATE permission, which is irritating if you don't otherwise use or need telephony.

4.Bugs: We have seen a few instances of production phones for which the implementation is buggy and returns garbage, for example zeros or asterisks.

If you want to get an unique id for the device, we suggest you use "Installation" framework in the following article.

Please check the reference: http://android-developers.blogspot.tw/2011/03/identifying-app-installations.html

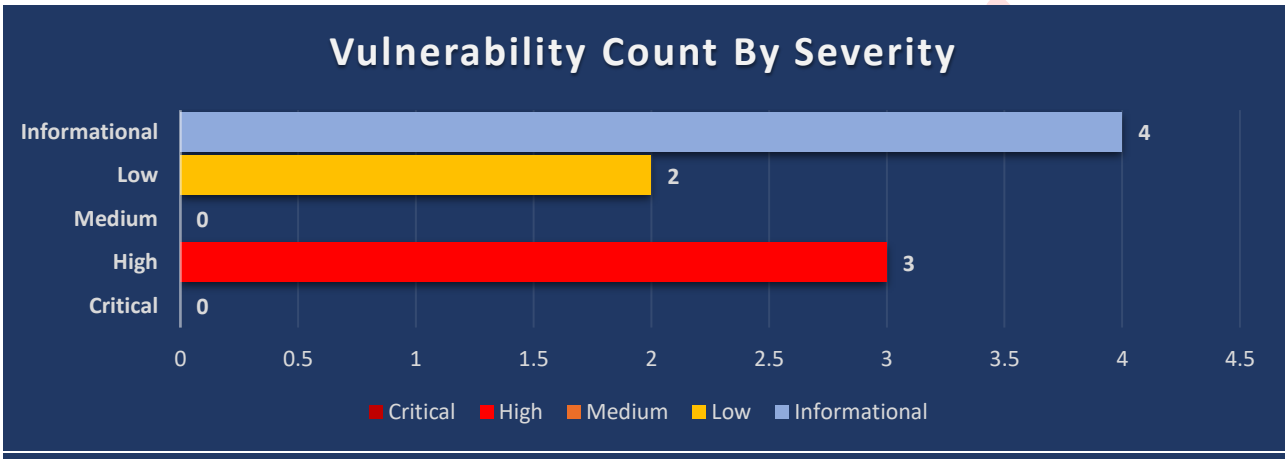
```
=>Landroidx/core/telephony/TelephonyManagerCompat;-
>getImei(Landroid/telephony/TelephonyManager;)Ljava/lang/String; (0xb0)
---> Landroid/telephony/TelephonyManager;->getDeviceId()Ljava/lang/String;
```

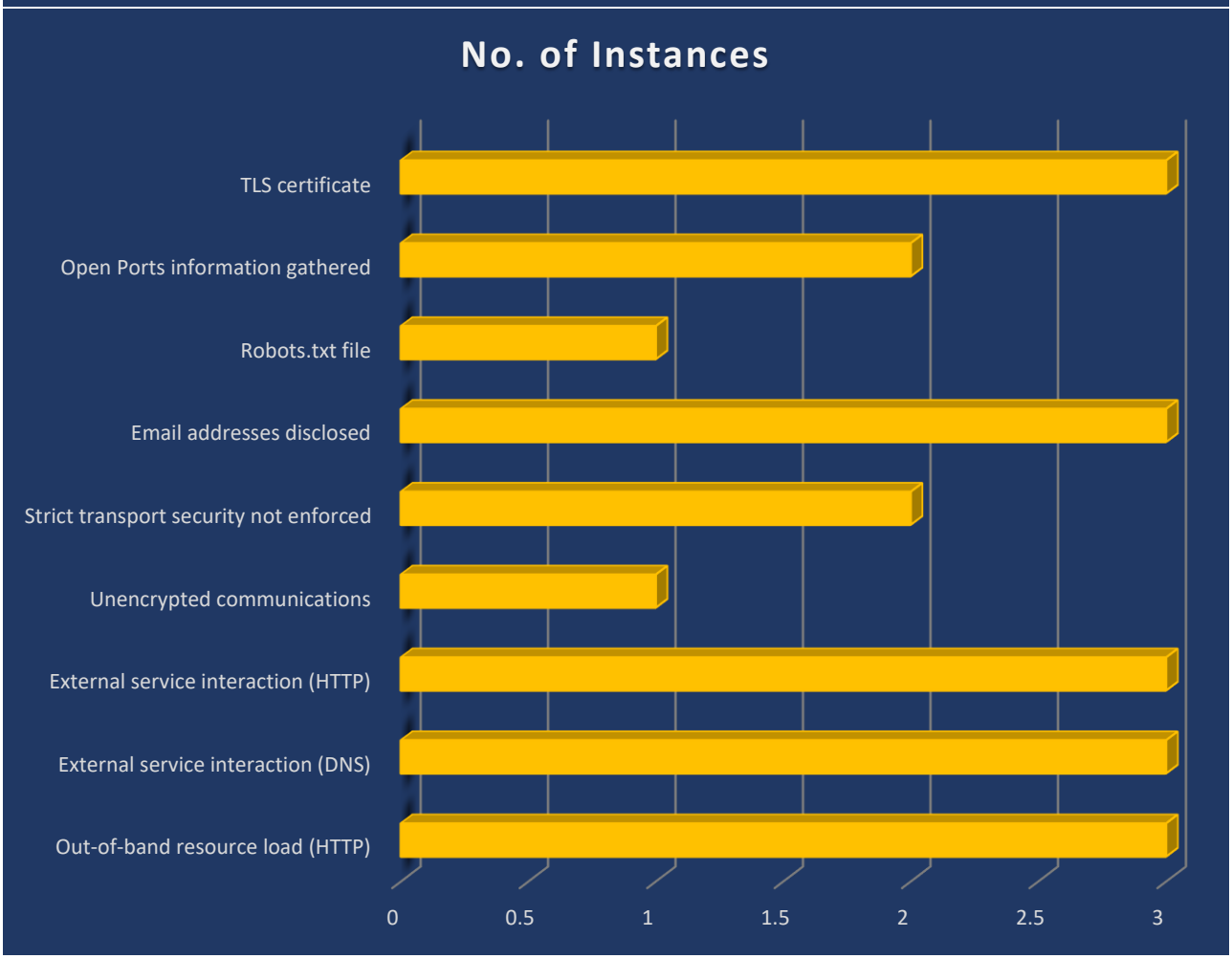
Nurse Station and Smart Medic Azure Applications

5. Technical Report of "Nurse Station and Smart Medic Azure Application" Project Vulnerability Assessment

The section uncovers the security checkups, which presents the findings of a security assessment conducted in our web applications and APIs.

This section reveals the exact areas where your Smart Medic Solution project could be exposed to security threats, areas needed to be improved and it will recommend the solutions to address such risks.





5.1 Out-of-band resource load (HTTP)

There are 3 instances of this issue:

- https://smartmedic-testing.com
- https://admin.smartmedic-testing.com
- https://api.smartmedic-testing.com/

Issue background:
Out-of-band resource load arises when it is possible to induce an application to fetch content from an arbitrary external location, and incorporate that content into the application's own response(s). The ability to trigger arbitrary out-of-band resource load does not constitute a vulnerability in its own right, and in some cases might even be the intended behavior of the application. However, in many cases, it can indicate a vulnerability with serious consequences.

The ability to request and retrieve web content from other systems can allow the application server to be used as a two-way attack proxy. By submitting suitable payloads, an attacker can cause the application server to attack, or retrieve content from, other systems that it can interact with. This may include public third-party systems, internal systems within the same organization, or services available on the local loopback adapter of the application server itself. Depending on the network architecture, this may expose highly vulnerable internal services that are not otherwise accessible to external attackers.

Additionally, the application's processing of web content that is retrieved from arbitrary URLs exposes some important and non-conventional attack surface. An attacker can deploy a web server that returns malicious content, and then induce the application to retrieve and process that content. This processing might give rise to the types of input-based vulnerabilities that are normally found when unexpected input is submitted directly in requests to the application. The out-of-band attack surface that the application exposes should be thoroughly tested for these types of vulnerabilities.

Issue remediation:
You should review the purpose and intended use of the relevant application functionality, and determine whether the ability to trigger arbitrary out-of-band resource load is intended behavior. If so, you should be aware of the types of attacks that can be performed via this behavior and take appropriate measures. These measures might include blocking network access from the application server to other internal systems, and hardening the application server itself to remove any services available on the local loopback adapter. You should also ensure that content retrieved from other systems is processed in a safe manner, with the usual precautions that are applicable when processing input from direct incoming web requests.

If the ability to trigger arbitrary out-of-band resource load is not intended behavior, then you should implement a whitelist of permitted URLs, and block requests to URLs that do not appear on this whitelist.

References:

- Burp Collaborator
- Out-of-band application security testing (OAST)
- PortSwigger Research: Cracking the Lens

Vulnerability classifications:

- CWE-610: Externally Controlled Reference to a Resource in Another Sphere
- CWE-918: Server-Side Request Forgery (SSRF)

1. https://smartmedic-testing.com

Severity: High
Confidence: Certain
Host: https://smartmedic-testing.com
Path: /

Issue detail:
It is possible to induce the application to retrieve the contents of an arbitrary external URL and return those contents in its own response. The payload **iqcvj6oxkb858wra5e2fuq939ufn3jrcq0gn6bv.oastify.com** was submitted in the SSL SNI value and the HTTP Host header. The application performed an HTTP request to the specified domain. The response from that request was then included in the application's own response.

Advisory Request Response
Pretty Raw Hex

```
1 GET / HTTP/1.1
2 Host: iqcvj6oxkb858wra5e2fuq939ufn3jrcq0gn6bv.oastify.com
3 Pragma: no-cache
4 Cache-Control: no-cache, no-transform
5 Connection: close
6
```

Advisory Request Response
Pretty Raw Hex Render

```
1 HTTP/1.1 200 OK
2 Server: Burp Collaborator https://burpcollaborator.net/
3 X-Collaborator-Version: 4
4 Content-Type: text/html
5 Content-Length: 62
6
7 <html>
    <body>
      5l3xjo6gmsjb66wptk375szjlgoglrgifigz
    </body>
  </html>
```

2. https://api.smartmedic-testing.com/api/admin/getwebapplatestversion

Severity: High
Confidence: Certain
Host: https://api.smartmedic-testing.com
Path: /api/admin/getwebapplatestversion

Issue detail:
It is possible to induce the application to retrieve the contents of an arbitrary external URL and return those contents in its own response. The payload **xopahlmciq6k6bpp3t0us57i79d21vpoocez4nt.oastify.com** was submitted in the SSL SNI value and the HTTP Host header. The application performed an HTTP request to the specified domain. The response from that request was then included in the application's own response.

Advisory Request Response

Pretty Raw Hex

```
1 GET / HTTP/1.1
2 Host: xopahlmciq6k6bpp3t0us57i79d2lvpoocez4nt.oastify.com
3 Pragma: no-cache
4 Cache-Control: no-cache, no-transform
5 Connection: close
```

Advisory Request Response

Pretty Raw Hex Render

```
1 HTTP/1.1 200 OK
2 Server: Burp Collaborator https://burpcollaborator.net/
3 X-Collaborator-Version: 4
4 Content-Type: text/html
5 Content-Length: 62
6
7 <html>
    <body>
      513xjo6gmsjb66wptk375szjlglglrgifigz
    </body>
  </html>
```

3. https://admin.smartmedic-testing.com

Severity: High
Confidence: Certain
Host: https://admin.smartmedic-testing.com/
Path: /

Issue detail:
It is possible to induce the application to retrieve the contents of an arbitrary external URL and return those contents in its own response. The payload **bo3ohzmqi46y6pp33708sj7w7ndg1ep7ovei46t.oastify.com** was submitted in the SSL SNI value and the HTTP Host header. The application performed an HTTPS request to the specified domain. The response from that request was then included in the application's own response.

Advisory Request Response Collaborator HTTP interaction

Pretty Raw Hex

```
1 GET / HTTP/1.1
2 Host: bo3ohzmqi46y6pp33708sj7w7ndglep7ovei46t.oastify.com
3 Pragma: no-cache
4 Cache-Control: no-cache, no-transform
5 Connection: close
6
```

Advisory | Request | Response | Collaborator HTTP interaction

Pretty | Raw | Hex | Render

```
1 HTTP/1.1 200 OK
2 Server: Burp Collaborator https://burpcollaborator.net/
3 X-Collaborator-Version: 4
4 Content-Type: text/html
5 Content-Length: 62
6
7 <html>
    <body>
      513xjo6gmsjb66wptk375szjlgqglrgifigz
    </body>
  </html>
```

Advisory | Request | Response | Collaborator HTTP interaction

Description | Request to Collaborator | Response from Collaborator

Pretty | Raw | Hex

```
1 GET / HTTP/1.1
2 Host: bo3ohzmqi46y6pp33708sj7w7ndglep7ovei46t.oastify.com
3 Pragma: no-cache
4 Cache-Control: no-cache, no-transform
5 Connection: close
6
```

Advisory | Request | Response | Collaborator HTTP interaction

Description | Request to Collaborator | Response from Collaborator

Pretty | Raw | Hex | Render

```
1 HTTP/1.1 200 OK
2 Server: Burp Collaborator https://burpcollaborator.net/
3 X-Collaborator-Version: 4
4 Content-Type: text/html
5 Content-Length: 62
6
7 <html>
    <body>
      513xjo6gmsjb66wptk375szjlgqglrgifigz
    </body>
  </html>
```

5.2 External service interaction (DNS)

There are 3 instances of this issue:

- https://smartmedic-testing.com
- https://api.smartmedic-testing.com
- https://admin.smartmedic-testing.com

Issue background:

External service interaction arises when it is possible to induce an application to interact with an arbitrary external service, such as a web or mail server. The ability to trigger arbitrary external service interactions does not constitute a vulnerability in its own right, and in some cases might even be the intended behavior of the application. However, in many cases, it can indicate a vulnerability with serious consequences.

In cases where DNS-based interactions can be triggered, it is normally possible to trigger interactions using other service types, and these are reported as separate issues. If a payload that specifies a particular service type (e.g. a URL) triggers only a DNS-based interaction, then this strongly indicates that the application attempted to connect using that other service, but was prevented from doing so by egress filters in place at the network layer. The ability to send requests to other systems can allow the vulnerable server to be used as an attack proxy. By submitting suitable payloads, an attacker can cause the application server to attack other systems that it can interact with. This may include public third-party systems, internal systems within the same organization, or services available on the local loopback adapter of the application server itself. Depending on the network architecture, this may expose highly vulnerable internal services that are not otherwise accessible to external attackers.

Issue remediation:
You should review the purpose and intended use of the relevant application functionality, and determine whether the ability to trigger arbitrary external service interactions is intended behavior. If so, you should be aware of the types of attacks that can be performed via this behavior and take appropriate measures. These measures might include blocking network access from the application server to other internal systems, and hardening the application server itself to remove any services available on the local loopback adapter.

If the ability to trigger arbitrary external service interactions is not intended behavior, then you should implement a whitelist of permitted services and hosts, and block any interactions that do not appear on this whitelist.

Out-of-Band Application Security Testing (OAST) is highly effective at uncovering high-risk features, to the point where finding the root cause of an interaction can be quite challenging. To find the source of an external service interaction, try to identify whether it is triggered by specific application functionality, or occurs indiscriminately on all requests. If it occurs on all endpoints, a front-end CDN or application firewall may be responsible, or a back-end analytics system parsing server logs. In some cases, interactions may originate from third-party systems; for example, a HTTP request may trigger a poisoned email which passes through a link-scanner on its way to the recipient.

References:
- Burp Collaborator
- Out-of-band application security testing (OAST)
- PortSwigger Research: Cracking the Lens

Vulnerability classifications:
- CWE-610: Externally Controlled Reference to a Resource in Another Sphere
- CWE-918: Server-Side Request Forgery (SSRF)
- CWE-406: Insufficient Control of Network Message Volume (Network Amplification)

1. https://smartmedic-testing.com

Severity: High
Confidence: Certain
Host: https://smartmedic-testing.com
Path: /

Issue detail:

It is possible to induce the application to perform server-side DNS lookups of arbitrary domain names. The payload **dubqn1sso6c0crv5996ayldydpji7ev7uvkia6z.oastify.com** was submitted in the SSL SNI value and the HTTP Host header. The application performed a DNS lookup of the specified domain.

Advisory | Request | Response | Collaborator DNS interaction

Pretty | Raw | Hex

```
1 GET / HTTP/1.1
2 Host: dubqn1sso6c0crv5996ayldydpji7ev7uvkia6z.oastify.com
3 Pragma: no-cache
4 Cache-Control: no-cache, no-transform
5 Connection: close
```

Advisory | Request | Response | Collaborator DNS interaction

Pretty | Raw | Hex | Render

```
1 HTTP/1.1 200 OK
2 Server: Burp Collaborator https://burpcollaborator.net/
3 X-Collaborator-Version: 4
4 Content-Type: text/html
5 Content-Length: 62
6
7 <html>
    <body>
      613xjo6gmsjb66wptk375szjlgoglrgifigz
    </body>
  </html>
```

Advisory | Request | Response | Collaborator DNS interaction

Description | DNS query

Hex | Raw

```
00000000  44 e5 00 00 00 01 00 00  00 00 00 00 27 64 75 62  Då□'dub
00000010  71 6e 31 73 73 6f 36 63  30 63 72 76 35 39 39 36  qn1sso6c0crv5996
00000020  61 79 6c 64 79 64 70 6a  69 37 65 76 37 75 76 6b  ayldydpji7ev7uvk
00000030  69 61 36 7a 07 6f 61 73  74 69 66 79 03 63 6f 6d  ia6z□oastify□com
00000040  00 00 01 00 01 -- -- --  -- -- -- -- -- -- -- --  □□
```

2. https://api.smartmedic-testing.com/api/admin/getwebapplatestversion

Severity: High
Confidence: Certain
Host: https://api.smartmedic-testing.com
Path: /api/admin/getwebapplatestversion

Issue detail:
It is possible to induce the application to perform server-side DNS lookups of arbitrary domain names. The payload **hqbuj5owka848vr95d2eup929tfm3fr8qwgj67v.oastify.com** was submitted in the SSL SNI value and the HTTP Host header. The application performed a DNS lookup of the specified domain.

Advisory | Request | Response | Collaborator DNS interaction

Pretty | Raw | Hex

```
1 GET / HTTP/1.1
2 Host: hqbuj5owka848vr95d2eup929tfm3fr8qwgj67v.oastify.com
3 Pragma: no-cache
4 Cache-Control: no-cache, no-transform
5 Connection: close
6
```

Advisory | Request | Response | Collaborator DNS interaction

Pretty | Raw | Hex | Render

```
1 HTTP/1.1 200 OK
2 Server: Burp Collaborator https://burpcollaborator.net/
3 X-Collaborator-Version: 4
4 Content-Type: text/html
5 Content-Length: 62
6
7 <html>
    <body>
      513xjo6gmsjb66wptk375szjlglglrgifigz
    </body>
  </html>
```

Advisory | Request | Response | Collaborator DNS interaction

Description | DNS query

Hex | Raw

```
00000000  6f 63 00 00 00 01 00 00  00 00 00 00 27 68 71 62  oc□'hqb
00000010  75 6a 35 6f 77 6b 61 38  34 38 76 72 39 35 64 32  uj5owka848vr95d2
00000020  65 75 70 39 32 39 74 66  6d 33 66 72 38 71 77 67  eup929tfm3fr8qwg
00000030  6a 36 37 76 07 6f 61 73  74 69 66 79 03 63 6f 6d  j67v□oastify□com
00000040  00 00 01 00 01 -- -- --  -- -- -- -- -- -- -- --  □□
```

3. https://admin.smartmedic-testing.com

Severity: High
Confidence: Certain
Host: https://admin.smartmedic-testing.com
Path: /

Issue detail:
Issue detail
It is possible to induce the application to perform server-side DNS lookups of arbitrary domain names. The payload **8w5lpwunq1evemx0b4850gftfkld9bx4wsmfc31.oastify.com** was submitted in the SSL SNI value and the HTTP Host header. The application performed a DNS lookup of the specified domain.

Advisory | Request | Response | Collaborator DNS interaction

Pretty | Raw | Hex

```
1 GET / HTTP/1.1
2 Host: 8w5lpwunqlevemx0b4850gftfkld9bx4wsmfc31.oastify.com
3 Pragma: no-cache
4 Cache-Control: no-cache, no-transform
5 Connection: close
```

Advisory | Request | Response | Collaborator DNS interaction

Pretty | Raw | Hex | Render

```
1 HTTP/1.1 200 OK
2 Server: Burp Collaborator https://burpcollaborator.net/
3 X-Collaborator-Version: 4
4 Content-Type: text/html
5 Content-Length: 62
6
7 <html>
    <body>
      513xjo6gmsjb66wptk375szjlgqglrgifigz
    </body>
  </html>
```

Advisory | Request | Response | Collaborator DNS interaction

Description | DNS query

Hex | Raw

```
00000000  34 f9 00 00 00 01 00 00  00 00 00 00 27 38 77 35  4ù□'8w5
00000010  6c 70 77 75 6e 71 31 65  76 65 6d 78 30 62 34 38  lpwunqlevemx0b48
00000020  35 30 67 66 74 66 6b 6c  64 39 62 78 34 77 73 6d  50gftfkld9bx4wsm
00000030  66 63 33 31 07 6f 61 73  74 69 66 79 03 63 6f 6d  fc31□oastify□com
00000040  00 00 01 00 01 -- -- --  -- -- -- -- -- -- -- --  □□
```

5.3 External service interaction (HTTP)

There are 3 instances of this issue:

- https://smartmedic-testing.com
- https://api.smartmedic-testing.com
- https://admin.smartmedic-testing.com

Issue background:

External service interaction arises when it is possible to induce an application to interact with an arbitrary external service, such as a web or mail server. The ability to trigger arbitrary external service interactions does not constitute a vulnerability in its own right, and in some cases might even be the intended behavior of the application. However, in many cases, it can indicate a vulnerability with serious consequences.

The ability to send requests to other systems can allow the vulnerable server to be used as an attack proxy. By submitting suitable payloads, an attacker can cause the application server to attack other systems that it can interact with. This may include public third-party systems, internal systems within the same organization, or services available on the local loopback adapter of the application server itself. Depending on the network architecture, this may expose highly vulnerable internal services that are not otherwise accessible to external attackers.

Issue remediation:
You should review the purpose and intended use of the relevant application functionality, and determine whether the ability to trigger arbitrary external service interactions is intended behavior. If so, you should be aware of the types of attacks that can be performed via this behavior and take appropriate measures. These measures might include blocking network access from the application server to other internal systems, and hardening the application server itself to remove any services available on the local loopback adapter.

If the ability to trigger arbitrary external service interactions is not intended behavior, then you should implement a whitelist of permitted services and hosts, and block any interactions that do not appear on this whitelist.

Out-of-Band Application Security Testing (OAST) is highly effective at uncovering high-risk features, to the point where finding the root cause of an interaction can be quite challenging. To find the source of an external service interaction, try to identify whether it is triggered by specific application functionality, or occurs indiscriminately on all requests. If it occurs on all endpoints, a front-end CDN or application firewall may be responsible, or a back-end analytics system parsing server logs. In some cases, interactions may originate from third-party systems; for example, a HTTP request may trigger a poisoned email which passes through a link-scanner on its way to the recipient.

References:
- Burp Collaborator
- Out-of-band application security testing (OAST)
- PortSwigger Research: Cracking the Lens

Vulnerability classifications:
- CWE-918: Server-Side Request Forgery (SSRF)
- CWE-406: Insufficient Control of Network Message Volume (Network Amplification)

1. https://smartmedic-testing.com

Severity: High
Confidence: Certain
Host: https://smartmedic-testing.com
Path: /

Issue detail:
It is possible to induce the application to perform server-side HTTPS requests to arbitrary domains. The payload **1ace3p8g4usosfbtpxmye9tmtdz6n2bvaj06quf.oastify.com** was submitted in the SSL SNI value and the HTTP Host header. The application performed an HTTPS request to the specified domain.

Advisory | Request | Response | Collaborator HTTP interaction

Pretty | Raw | Hex | Render

```
1 HTTP/1.1 200 OK
2 Server: Burp Collaborator https://burpcollaborator.net/
3 X-Collaborator-Version: 4
4 Content-Type: text/html
5 Content-Length: 62
6
7 <html>
    <body>
      513xjo6gmsjb66wptk375szjlgoglrgifigz
    </body>
  </html>
```

Advisory | Request | Response | Collaborator HTTP interaction

Description | Request to Collaborator | Response from Collaborator

Pretty | Raw | Hex

```
1 GET / HTTP/1.1
2 Host: 1ace3p8g4usosfbtpxmye9tmtdz6n2bvaj06quf.oastify.com
3 Pragma: no-cache
4 Cache-Control: no-cache, no-transform
5 Connection: close
```

Advisory | Request | Response | Collaborator HTTP interaction

Description | Request to Collaborator | Response from Collaborator

Pretty | Raw | Hex | Render

```
1 HTTP/1.1 200 OK
2 Server: Burp Collaborator https://burpcollaborator.net/
3 X-Collaborator-Version: 4
4 Content-Type: text/html
5 Content-Length: 62
6
7 <html>
    <body>
      513xjo6gmsjb66wptk375szjlgoglrgifigz
    </body>
  </html>
```

2. https://admin.smartmedic-testing.com

Severity: High
Confidence: Certain
Host: https://admin.smartmedic-testing.com
Path: /

Issue detail:
It is possible to induce the application to perform server-side HTTPS requests to arbitrary domains. The payload **usq7liq9mnaha8tm7q4rw2bfb6hz5xtqsei18px.oastify.com** was submitted in the SSL SNI value and the HTTP Host header. The application performed an HTTPS request to the specified domain.

Advisory | Request | Response | Collaborator HTTP interaction

Pretty | Raw | Hex

```
GET / HTTP/1.1
Host: usq7liq9mnaha8tm7q4rw2bfb6hz5xtqseil8px.oastify.com
Pragma: no-cache
Cache-Control: no-cache, no-transform
Connection: close
```

Advisory | Request | Response | Collaborator HTTP interaction

Pretty | Raw | Hex | Render

```
HTTP/1.1 200 OK
Server: Burp Collaborator https://burpcollaborator.net/
X-Collaborator-Version: 4
Content-Type: text/html
Content-Length: 62

<html>
  <body>
    513xjo6gmsjb66wptk375szjlgqglrgifigz
  </body>
</html>
```

Advisory | Request | Response | Collaborator HTTP interaction

Description | Request to Collaborator | Response from Collaborator

Pretty | Raw | Hex

```
GET / HTTP/1.1
Host: usq7liq9mnaha8tm7q4rw2bfb6hz5xtqseil8px.oastify.com
Pragma: no-cache
Cache-Control: no-cache, no-transform
Connection: close
```

Advisory | Request | Response | Collaborator HTTP interaction

Description | Request to Collaborator | Response from Collaborator

Pretty | Raw | Hex | Render

```
HTTP/1.1 200 OK
Server: Burp Collaborator https://burpcollaborator.net/
X-Collaborator-Version: 4
Content-Type: text/html
Content-Length: 62

<html>
  <body>
    513xjo6gmsjb66wptk375szjlgqglrgifigz
  </body>
</html>
```

3. https://api.smartmedic-testing.com/api/admin/getwebapplatestversion

Severity: High
Confidence: Certain

Host: https://api.smartmedic-testing.com
Path: /api/admin/getwebapplatestversion

Issue detail:
It is possible to induce the application to perform server-side HTTPS requests to arbitrary domains. The payload **dctq51as66u0urd5r9oaglvyvp1ipbd4cs2fs3h.oastify.com** was submitted in the SSL SNI value and the HTTP Host header. The application performed an HTTPS request to the specified domain.

Advisory | Request | Response | Collaborator HTTP interaction
Pretty | Raw | Hex

```
1 GET / HTTP/1.1
2 Host: dctq51as66u0urd5r9oaglvyvplipbd4cs2fs3h.oastify.com
3 Pragma: no-cache
4 Cache-Control: no-cache, no-transform
5 Connection: close
```

Advisory | Request | Response | Collaborator HTTP interaction
Pretty | Raw | Hex | Render

```
1 HTTP/1.1 200 OK
2 Server: Burp Collaborator https://burpcollaborator.net/
3 X-Collaborator-Version: 4
4 Content-Type: text/html
5 Content-Length: 62
6
7 <html>
    <body>
      513xjo6gmsjb66wptk375szjlglglrgifigz
    </body>
  </html>
```

Advisory | Request | Response | Collaborator HTTP interaction
Description | Request to Collaborator | Response from Collaborator
Pretty | Raw | Hex

```
1 GET / HTTP/1.1
2 Host: dctq51as66u0urd5r9oaglvyvplipbd4cs2fs3h.oastify.com
3 Pragma: no-cache
4 Cache-Control: no-cache, no-transform
5 Connection: close
```

Advisory | Request | Response | Collaborator HTTP interaction
Description | Request to Collaborator | Response from Collaborator
Pretty | Raw | Hex | Render

```
1 HTTP/1.1 200 OK
2 Server: Burp Collaborator https://burpcollaborator.net/
3 X-Collaborator-Version: 4
4 Content-Type: text/html
5 Content-Length: 62
6
7 <html>
    <body>
      513xjo6gmsjb66wptk375szjlglglrgifigz
    </body>
  </html>
```

5.4 Unencrypted communications

Severity: Low
Confidence: Certain
Host: http://smartmedic-testing.com
Path: /

Issue description
The application allows users to connect to it over unencrypted connections. An attacker suitably positioned to view a legitimate user's network traffic could record and monitor their interactions with the application and obtain any information the user supplies. Furthermore, an attacker able to modify traffic could use the application as a platform for attacks against its users and third-party websites. Unencrypted connections have been exploited by ISPs and governments to track users, and to inject adverts and malicious JavaScript. Due to these concerns, web browser vendors are planning to visually flag unencrypted connections as hazardous.

To exploit this vulnerability, an attacker must be suitably positioned to eavesdrop on the victim's network traffic. This scenario typically occurs when a client communicates with the server over an insecure connection such as public Wi-Fi, or a corporate or home network that is shared with a compromised computer. Common defenses such as switched networks are not sufficient to prevent this. An attacker situated in the user's ISP or the application's hosting infrastructure could also perform this attack. Note that an advanced adversary could potentially target any connection made over the Internet's core infrastructure.

Please note that using a mixture of encrypted and unencrypted communications is an ineffective defense against active attackers, because they can easily remove references to encrypted resources when these references are transmitted over an unencrypted connection.

Issue remediation
Applications should use transport-level encryption (SSL/TLS) to protect all communications passing between the client and the server. The Strict-Transport-Security HTTP header should be used to ensure that clients refuse to access the server over an insecure connection.

References
- Marking HTTP as non-secure
- Configuring Server-Side SSL/TLS
- HTTP Strict Transport Security

Vulnerability classifications
- CWE-326: Inadequate Encryption Strength
- CAPEC-94: Man in the Middle Attack
- CAPEC-157: Sniffing Attacks

5.5 Strict transport security not enforced

There are 2 instances of this issue:
- https://admin.smartmedic-testing.com/robots.txt
- https://api.smartmedic-testing.com/api

Issue description

The application fails to prevent users from connecting to it over unencrypted connections. An attacker able to modify a legitimate user's network traffic could bypass the application's use of SSL/TLS encryption, and use the application as a platform for attacks against its users. This attack is performed by rewriting HTTPS links as HTTP, so that if a targeted user follows a link to the site from an HTTP page, their browser never attempts to use an encrypted connection. The sslstrip tool automates this process.

To exploit this vulnerability, an attacker must be suitably positioned to intercept and modify the victim's network traffic. This scenario typically occurs when a client communicates with the server over an insecure connection such as public Wi-Fi, or a corporate or home network that is shared with a compromised computer. Common defenses such as switched networks are not sufficient to prevent this. An attacker situated in the user's ISP or the application's hosting infrastructure could also perform this attack. Note that an advanced adversary could potentially target any connection made over the Internet's core infrastructure.

Issue remediation

The application should instruct web browsers to only access the application using HTTPS. To do this, enable HTTP Strict Transport Security (HSTS) by adding a response header with the name 'Strict-Transport-Security' and the value 'max-age=expireTime', where expireTime is the time in seconds that browsers should remember that the site should only be accessed using HTTPS. Consider adding the 'includeSubDomains' flag if appropriate.

Note that because HSTS is a "trust on first use" (TOFU) protocol, a user who has never accessed the application will never have seen the HSTS header, and will therefore still be vulnerable to SSL stripping attacks. To mitigate this risk, you can optionally add the 'preload' flag to the HSTS header, and submit the domain for review by browser vendors.

References

- HTTP Strict Transport Security
- sslstrip
- HSTS Preload Form

Vulnerability classifications

- CWE-523: Unprotected Transport of Credentials
- CAPEC-94: Man in the Middle Attack
- CAPEC-157: Sniffing Attacks

1. https://admin.smartmedic-testing.com/robots.txt

Severity: Low
Confidence: Certain
Host: https://admin.smartmedic-testing.com
Path: /robots.txt

Request

```
GET /robots.txt HTTP/1.1
Host: admin.smartmedic-testing.com
Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,appl
ication/signed-exchange;v=b3;q=0.9
Upgrade-Insecure-Requests: 1
Accept-Encoding: gzip, deflate
```

```
Accept-Language: en-US;q=0.9,en;q=0.8
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/102.0.5005.63 Safari/537.36
Connection: close
Cache-Control: max-age=0
```

Response

```
HTTP/1.1 200 OK
Content-Length: 67
Connection: close
Content-Type: text/plain
Date: Thu, 28 Jul 2022 13:29:40 GMT
Server: Microsoft-IIS/10.0
Accept-Ranges: bytes
Cache-Control: no-cache, no-store, must-revalidate, pre-check=0, post-check=0, max-age=0, s-maxage=0
ETag: "0ab48ab689bd81:0"
Expires: 0
Last-Modified: Tue, 19 Jul 2022 12:11:26 GMT
Pragma: no-cache
Set-Cookie:
ARRAffinity=7fe6542cfbcf1e24643dda274f773fec3e017e37888d5f3aa90706f6a0ce412c;Path=/;HttpOnly;Secure;Domain=admin.smartmedic-testing.com
Set-Cookie:
ARRAffinitySameSite=7fe6542cfbcf1e24643dda274f773fec3e017e37888d5f3aa90706f6a0ce412c;Path=/;HttpOnly;SameSite=None;Secure;Domain=admin.smartmedic-testing.com
Vary: Accept-Encoding
X-Powered-By: ASP.NET
X-Frame-Options: DENY

# https://www.robotstxt.org/robotstxt.html
User-agent: *
Disallow:
```

2. https://api.smartmedic-testing.com/api

Severity: Low
Confidence: Certain
Host: https://api.smartmedic-testing.com
Path: /api

Request

```
GET /api HTTP/1.1
Host: api.smartmedic-testing.com
Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9
Upgrade-Insecure-Requests: 1
Accept-Encoding: gzip, deflate
Accept-Language: en-US;q=0.9,en;q=0.8
```

```
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/102.0.5005.63 Safari/537.36
Connection: close
Cache-Control: max-age=0
```

Response

```
HTTP/1.1 401 Unauthorized
Content-Length: 67
Connection: close
Content-Type: application/json; charset=utf-8
Date: Thu, 28 Jul 2022 13:30:53 GMT
ETag: W/"43-+aTCUkrxNXRDa0reW8Heu3O4lBk"
Vary: Origin
X-Powered-By: Express
X-Frame-Options: SAMEORIGIN

{"status":false,"statusCode":401,"data":{"message":"Unauthorize!"}}
```

5.6 Email addresses disclosed

There are 4 instances of this issue:

- https://admin.smartmedic-testing.com/static/js/2.82452bfd.chunk.js
- https://admin.smartmedic-testing.com/static/js/main.103fa717.chunk.js
- https://smartmedic-testing.com/static/js/2.1a42a5cb.chunk.js
- https://smartmedic-testing.com/static/js/main.7853f144.chunk.js

Issue background:
The presence of email addresses within application responses does not necessarily constitute a security vulnerability. Email addresses may appear intentionally within contact information, and many applications (such as web mail) include arbitrary third-party email addresses within their core content.

However, email addresses of developers and other individuals (whether appearing on-screen or hidden within page source) may disclose information that is useful to an attacker; for example, they may represent usernames that can be used at the application's login, and they may be used in social engineering attacks against the organization's personnel. Unnecessary or excessive disclosure of email addresses may also lead to an increase in the volume of spam email received.

Issue remediation
Consider removing any email addresses that are unnecessary, or replacing personal addresses with anonymous mailbox addresses (such as helpdesk@example.com).

To reduce the quantity of spam sent to anonymous mailbox addresses, consider hiding the email address and instead providing a form that generates the email server-side, protected by a CAPTCHA if necessary.

References:

- Web Security Academy: Information disclosure

Vulnerability classifications:

- CWE-200: Information Exposure
- CAPEC-37: Retrieve Embedded Sensitive Data

1. https://admin.smartmedic-testing.com/static/js/2.82452bfd.chunk.js

Severity: Informational
Confidence: Certain
Host: https://admin.smartmedic-testing.com
Path: /static/js/2.82452bfd.chunk.js

Issue detail:
The following email addresses were disclosed in the response:

- aes128-gcm@openssh.com
- aes192-gcm@openssh.com
- aes256-gcm@openssh.com
- git@github.com
- fedor@indutny.com
- -cert-v01@openssh.com
- ssh-rsa-cert-v01@openssh.com
- ssh-dss-cert-v01@openssh.com
- ssh-ed25519-cert-v01@openssh.com

Advisory Request Response

Pretty | Hex

```
1 GET /static/js/2.82452bfd.chunk.js HTTP/1.1
2 Host: admin.smartmedic-testing.com
3 Cookie: ARRAffinity=c02bd95f6de966f537132af58810d7960a1880e2261379fc4d49dd59e700e546; ARRAffinitySameSite=
  c02bd95f6de966f537132af58810d7960a1880e2261379fc4d49dd59e700e546
4 Accept:
  text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/
  signed-exchange;v=b3;q=0.9
5 Upgrade-Insecure-Requests: 1
6 Accept-Encoding: gzip, deflate
7 Accept-Language: en-US;q=0.9,en;q=0.8
8 User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko)
  Chrome/102.0.5005.63 Safari/537.36
9 Connection: close
10 Cache-Control: max-age=0
```

```
HTTP/1.1 200 OK
Content-Length: 4550046
Connection: close
Content-Type: application/x-javascript
Date: Mon, 20 Jun 2022 13:31:20 GMT
Server: Microsoft-IIS/10.0
Accept-Ranges: bytes
Cache-Control: no-cache, no-store, must-revalidate, pre-check=0, post-check=0, max-age=0, s-maxage=0
ETag: "0d8f3ecef81d81:0"
Expires: 0
Last-Modified: Fri, 17 Jun 2022 02:14:08 GMT
Pragma: no-cache
Set-Cookie:
ARRAffinity=c02bd95f6de966f537132af58810d7960a1880e2261379fc4d49dd59e700e546;Path=/;HttpOnly;Secure;Domain=admin.smartmedic-
```

```
testing.com
Set-Cookie:
ARRAffinitySameSite=c02bd95f6de966f537132af58810d7960a1880e2261379fc4d49dd59e700e546;Path=/;HttpOnly;SameSite=None;Secure;Domain=a
dmin.smartmedic-testing.com
Vary: Accept-Encoding
X-Powered-By: ASP.NET

/*! For license information please see 2.82452bfd.chunk.js.LICENSE.txt */
(this["webpackJsonpdemo-nsa-admin-app"]=this["webpackJsonpdemo-nsa-admin-app"]||[]).push([[2],[function(e,t,r){"use strict";e.
...[SNIP]...
switch(e){case"3des-cbc":t.keySize=24,t.blockSize=8,t.openssslName="des-ede3-cbc";break;case"blowfish-
cbc":t.keySize=16,t.blockSize=8,t.openssslName="bf-cbc";break;case"aes128-cbc":case"aes128-ctr":case"aes128-
gcm@openssh.com":t.keySize=16,t.blockSize=16,t.openssslName="aes-128-"+e.slice(7,10);break;case"aes192-cbc":case"aes192-ctr":case"aes192-
gcm@openssh.com":t.keySize=24,t.blockSize=16,t.openssslName="aes-192-"+e.slice(7,10);break;case"aes256-cbc":case"aes256-ctr":case"aes256-
gcm@openssh.com":t.keySize=32,t.blockSize=16,t.openssslName="aes-256-"+e.slice(7,10);break;default:throw new Error('Unsupported openssl cipher
"'+e+'"')}return t},publicFromPrivateECDSA:function(e,t){n.string(e,"curve
...[SNIP]...
ix":"npm run lint -- --fix","unit":"istanbul test _mocha --reporter=spec test/index.js","test":"npm run lint && npm run unit","version":"grunt dist && git
add dist/"},"repository":{"type":"git","url":"git@github.com:indutny/elliptic"},"keywords":["EC","Elliptic","curve","Cryptography"],"author":"Fedor
Indutny <fedor@indutny.com>
...[SNIP]...
(30),i=r(110),a=r(43),o=r(34).Buffer,s=r(52),l=r(47),c=(r(48),r(130)),u=r(86),h=r(74),f=r(49),d=r(129);var
p={user:1,host:2};Object.keys(p).forEach((function(e){p[p[e]]=e}));var m=/^ecdsa-sha2-([^@-]+)-cert-v01@openssh.com$/;function g(e,t,r){var a=new
i({buffer:e}),o=a.readString();if(void 0!==t&&o!==t)throw new Error("SSH certificate algorithm mismatch");void 0===t&&(t=o);var
g={signatures:{}};g.signatures.openssh={},
...[SNIP]...
Buffer("ssh")),l.toBuffer()}function w(e){if("rsa"===e.type)return"ssh-rsa-cert-v01@openssh.com";if("dsa"===e.type)return"ssh-dss-cert-
v01@openssh.com";if("ecdsa"===e.type)return"ecdsa-sha2-"+e.curve+"-cert-v01@openssh.com";if("ed25519"===e.type)return"ssh-ed25519-cert-
v01@openssh.com";throw new Error("Unsupported key type "+e.type)}},function(e,t,r){var n=r(314);e.exports={read:function(e,t){"string"!==typeof
e&&(i.buffer(e,"buf"),e=e.toString("ascii"));var r,o,s=e.trim().split(/[
...[SNIP]...
```

2. https://admin.smartmedic-testing.com/static/js/main.103fa717.chunk.js

Severity: Informational
Confidence: Certain
Host: https://admin.smartmedic-testing.com
Path: /static/js/main.103fa717.chunk.js

Issue detail:
The following email addresses were disclosed in the response:

- abc@xyz.com
- abc@stryker.com
- email@stryker.com

Advisory Request Response

Pretty Raw Hex

```
1 GET /static/js/main.103fa717.chunk.js HTTP/1.1
2 Host: admin.smartmedic-testing.com
3 Cookie: ARRAffinity=c02bd95f6de966f537132af58810d7960a1880e2261379fc4d49dd59e700e546; ARRAffinitySameSite=
  c02bd95f6de966f537132af58810d7960a1880e2261379fc4d49dd59e700e546
4 Accept:
  text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/
  signed-exchange;v=b3;q=0.9
5 Upgrade-Insecure-Requests: 1
6 Accept-Encoding: gzip, deflate
7 Accept-Language: en-US;q=0.9,en;q=0.8
8 User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko)
  Chrome/102.0.5005.63 Safari/537.36
9 Connection: close
10 Cache-Control: max-age=0
```

Advisory Request Response

Pretty Raw Hex Render

```
firstName)&&(a="Please enter first name"),""===o.value&&(l="Please select role"),""===(null===N||void 0===N?
void 0:N.emailID)||I.isValidEmail||(e="Enter email id in format : abc@stryker.com"),(null===N||void 0===N?
void 0:N.phoneNumber.length)>3&&13!==(null===N||void 0===N?void 0:N.phoneNumber.length)&&(i=
"Please enter 10 digit"),""===e&&""===a&&""===l&&""===i){var n={data:{request:{emailId:null===N||void 0===N?
void 0:N.emailID,firstName:null===N||void 0===N?void 0:N.firstName,lastName:null===N||void 0===N?void 0:N.
lastName,contactNumber:null===N||void 0===N?void 0:N.phoneNumber,roleId:o.value,isNotifyReport:v,isActive:d?1
:0}}};null!==t&&void 0!==t&&t.id?m(t.id,n):f(n)}else{var s=C(null===N||void 0===N?void 0:N.emailID);k(Object(
_e.a)(Object(_e.a)({},I),{},{emailID:e,isValidEmail:""!==(null===N||void 0===N?void 0:N.emailID)&&s,firstName
:a,isFirstName:""!==(null===N||void 0===N?void 0:N.firstName),Role:l,isRole:0!==(null===o||void 0===o?void 0:
o.value),phoneNumber:i,isPhoneNumber:!((null===N||void 0===N?void 0:N.phoneNumber.length)>3)||13===(null===N
||void 0===N?void 0:N.phoneNumber.length)}))}}()},children:"Save"}))]}):Object(on.jsx)("div",{children:
Object(on.jsx)("button",{className:"btn-filled",onClick:function(){x(!0)},children:"Edit"}))}))}),Object(on.
jsxs)("div",{className:w?"row mt-3":"row disabled mt-3",children:[Object(on.jsxs)("div",{className:
"col-4 mb-3",children:[Object(on.jsx)("label",{className:"form-label required-field",children:"Email ID"}),
Object(on.jsx)("input",{type:"text",placeholder:"email@stryker.com",value:N.emailID,name:"emailID",onChange:
function(e){return T(e)},className:"form-control w-100"}),Object(on.jsx)("div",{className:
"position-relative mb-2",children:Object(on.jsx)("div",{className:"invalid-feedback",children:""!==(null===I
```

Advisory Request Response

Pretty Raw Hex Render

```
className:"mb-3 position-relative",children:[Object(on.jsx)("label",{className:"form-label",children:"Email"}
),Object(on.jsx)("input",{type:"text",name:"loginId",placeholder:"abc@xyz.com",value:l,onChange:function(e){
return t.handleChange(e)},className:"form-control w-100"}),Object(on.jsx)("div",{className:"invalid-feedback"
,children:s.emailError})]}),Object(on.jsxs)("div",{className:"mb-5 position-relative",children:[Object(on.jsx
)("label",{className:"form-label",children:"Password"}),Object(on.jsx)("span",{className:"icon-eye",onClick:
this.togglePassword,children:n?Object(on.jsx)(vs.a,{}):Object(on.jsx)(js.a,{})}),Object(on.jsx)("input",{
```

3. https://smartmedic-testing.com/static/js/2.1a42a5cb.chunk.js

Severity: Informational
Confidence: Certain
Host: https://smartmedic-testing.com
Path: /static/js/2.1a42a5cb.chunk.js

Issue detail:
The following email addresses were disclosed in the response:

- git@github.com
- fedor@indutny.com

Advisory Request Response

Pretty Raw Hex

```
1 GET /static/js/2.1a42a5cb.chunk.js HTTP/1.1
2 Host: smartmedic-testing.com
3 Cookie: ARRAffinity=c02bd95f6de966f537132af58810d7960a1880e2261379fc4d49dd59e700e546; ARRAffinitySameSite=
  c02bd95f6de966f537132af58810d7960a1880e2261379fc4d49dd59e700e546;
  mp_6221ebd16bc258b3d56d226c287bc40b_mixpanel=
  %7B%22distinct_id%22%3A%20%22181814eda6050d-02ed64bcf8f66-4c2c7720-75300-181814eda61734%22%2C%22%24device_id%
  22%3A%20%22181814eda6050d-02ed64bcf8f66-4c2c7720-75300-181814eda61734%22%2C%22%24initial_referrer%22%3A%20%22
  %24direct%22%2C%22%24initial_referring_domain%22%3A%20%22%24direct%22%7D
4 Accept:
  text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/
  signed-exchange;v=b3;q=0.9
5 Upgrade-Insecure-Requests: 1
6 Accept-Encoding: gzip, deflate
7 Accept-Language: en-US;q=0.9,en;q=0.8
8 User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko)
  Chrome/102.0.5005.63 Safari/537.36
9 Connection: close
10 Cache-Control: max-age=0
```

Advisory Request Response

Pretty Raw Hex Render


```
,i,s,l),0===(v=i.invm(l).imul(g.add(o.mul(p))).mod(l)).cmpn(0)&&(v=!l,p=new a(0));return function(t,n){t=t.to
Array(),n=n.toArray(),128&t[0]&&(t=[0].concat(t));128&n[0]&&(n=[0].concat(n));var r=[48,t.length+n.length+4,2
,t.length];return r=r.concat(t,[2,n.length],n),new e(r)}(p,v)}(t,g,r)}if("rsa"!==d&&"ecdsa/rsa"!==d)throw new
 Error("wrong private key type");t=e.concat([p,t]);for(var v=g.modulus.byteLength(),m=[0,1];t.length+m.length
+1<v;)m.push(255);m.push(0);for(var b=-1;++b<t.length;)m.push(t[b]);return i(m,g)},t.exports.getKey=c,t.expor
ts.makeKey=f}).call(this,n(30).Buffer)},function(t){t.exports=JSON.parse('{"name":"elliptic","version":"6.5.2
","description":"EC cryptography","main":"lib/elliptic.js","files":["lib"],"scripts":{"jscs":"jscs benchmarks
/*.js lib/*.js lib/**/*.js lib/**/**/*.js test/index.js","jshint":"jscs benchmarks/*.js lib/*.js lib/**/*.js
lib/**/**/*.js test/index.js","lint":"npm run jscs && npm run jshint","unit":"istanbul test _mocha --reporter
=spec test/index.js","test":"npm run lint && npm run unit","version":"grunt dist && git add dist/"},"reposito
ry":{"type":"git","url":"git@github.com:indutny/elliptic"},"keywords":["EC","Elliptic","curve","Cryptography"
],"author":"Fedor Indutny <fedor@indutny.com>","license":"MIT","bugs":{"url":"
https://github.com/indutny/elliptic/issues"},"homepage":"https://github.com/indutny/elliptic
```


4. https://smartmedic-testing.com

Severity: Informational
Confidence: Certain
Host: https://smartmedic-testing.com
Path: /static/js/main.7853f144.chunk.js

Issue detail:
The following email addresses were disclosed in the response:

- smartmedic@stryker.com
- service.india@stryker.com
- globalprivacy@stryker.com
- apollo@gmail.com

Advisory Request Response

Pretty Hex

```
1 GET /static/js/main.7853f144.chunk.js HTTP/1.1
2 Host: smartmedic-testing.com
3 Cookie: APRAffinity=c02bd95f6de966f537132af58810d7960a1880e2261379fc4d49dd59e700e546; APRAffinitySameSite=
  c02bd95f6de966f537132af58810d7960a1880e2261379fc4d49dd59e700e546;
  mp_6221ebd16bc258b3d56d226c287bc40b_mixpanel=
  %7B%22distinct_id%22%3A%20%22181814ef4ab713-06df17462f5dc4-4c2c7720-75300-181814ef4accbb%22%2C%22%24device_id
  %22%3A%20%22181814ef4ab713-06df17462f5dc4-4c2c7720-75300-181814ef4accbb%22%2C%22%24initial_referrer%22%3A%20%
  22%24direct%22%2C%22%24initial_referring_domain%22%3A%20%22%24direct%22%7D
4 Accept:
  text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/
  signed-exchange;v=b3;q=0.9
5 Upgrade-Insecure-Requests: 1
6 Accept-Encoding: gzip, deflate
7 Accept-Language: en-US;q=0.9,en;q=0.8
8 User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko)
  Chrome/102.0.5005.63 Safari/537.36
9 Connection: close
10 Cache-Control: max-age=0
```

Advisory Request Response

Pretty Raw Hex Render


```
"noshadow request-service-modal"},d.a.createElement("div",null,d.a.createElement("div",{className:
"text-center"},d.a.createElement("h2",null,"Customer Service"),d.a.createElement("p",null,
"Please contact Stryker Customer Service"),d.a.createElement("p",{className:"mb-20"},"Tel: ",d.a.
createElement("b",null,"1800 103 8030"),d.a.createElement("br",null),"Email: ",d.a.createElement("a",{
className:"link-blue",href:"mailto:service.india@stryker.com"},"service.india@stryker.com"))))))}]),a)(s.
Component),Wa=function(e){Object(A.a)(a,e);var t=Object(p.a)(a);function a(e){var n;return Object(v.a)(this,a
),(n=t.call(this,e)).handleCardClick=function(e){var t;(0a.a.track(null===Da||void 0===Da?void 0:Da.
```

Advisory Request Response

Pretty Raw Hex Render

```
your information erased. If you would like a copy of the information held about you, or to exercise any other
 right, please contact us at ",d.a.createElement("a",{href:"mailto:globalprivacy@stryker.com"},
"globalprivacy@stryker.com"),".",d.a.createElement("p",null,
"If you like to change your settings for third party tracking cookies you can:"),d.a.createElement("ul",null,
d.a.createElement("li",null,
```

Advisory Request Response

Pretty Raw Hex Render

```
href:"mailto:globalprivacy@stryker.com"},"globalprivacy@stryker.com"),d.a.createElement("p",null,
"If we fail to respond to you within a reasonable period of receiving it in writing, or if you are dissatisfi
ed with the response that you receive from us, you may lodge a complaint with the data protection authorities
 in your home country.")))))}}]),a}(s.Component),yn=function(){return d.a.createElement("div",{className:
"content-wrapper"},d.a.createElement(da,{isDashboardHeader:!0}),d.a.createElement("div",{className:
"text-center mt-25"},d.a.createElement("br",null),d.a.createElement("h2",{className:"title-30"},
"Customer Service"),d.a.createElement("p",{className:"title-24"},"Please contact Stryker Customer Service"),d
.a.createElement("p",{className:"title-20"},"Tel: ",d.a.createElement("b",null,"1800 103 8030"),d.a.
createElement("br",null),"Email: ",d.a.createElement("a",{className:"link-blue",href:"mailto:".concat(
"service.india@stryker.com")},"service.india@stryker.com")))))},Cn=a(404),wn=a(181),Tn=function(e){Object(A.a)
(a,e);var t=Object(p.a)(a);function a(){var e;return Object(v.a)(this,a),(e=t.call(this)).
successFailureCallback={SuccessCallback:function(t){var a,n,i=(null===t||void 0===t?void 0:t.data).data.
```

Advisory Request Response

Pretty Raw Hex Render

```
(A.a)(a,e);var t=Object(p.a)(a);function a(){return Object(v.a)(this,a),t.apply(this,arguments)}return Object
(m.a)(a,[{key:"render",value:function(){return d.a.createElement("div",{className:"content-wrapper"},d.a.
createElement(va,null),d.a.createElement("div",{className:"text-center mt-25"},d.a.createElement("br",null),d
.a.createElement("h2",{className:"title-30"},"Forgot Password?"),d.a.createElement("p",{className:"title-24"}
,"Please contact Stryker Customer Service"),d.a.createElement("p",{className:"title-20"},"Tel: ",d.a.
createElement("b",null,"1800 103 8030"),d.a.createElement("br",null),"Email: ",d.a.createElement("a",{
className:"link-blue",href:"mailto:".concat("service.india@stryker.com")},"service.india@stryker.com")))))}}])
,a}(s.Component),jn=a(240),Vn=a.n(jn);a(745);var Pn={getPatientReportURL:function(e,t){var a=t.
```

Advisory Request Response

Pretty Raw Hex Render

```
,d.a.createElement("div",null,d.a.createElement("label",{className:"required-field"},this.props.t(
"SETTING.HOSPITALCODE",{framework:"react-i18next"})),d.a.createElement("input",{maxLength:6,type:"text",value
:i,ref:this.hospitalCode,onChange:this.handleHospitalCodeChange,placeholder:"12345"}),d.a.createElement("div"
,{className:"invalid-feedback"},this.getHospitalCodeError(l)))),d.a.createElement("div",{className:
"formControler"},d.a.createElement("label",{className:"required-field"},this.props.t("SETTING.EMAIL",{
framework:"react-i18next"})),d.a.createElement("input",{type:"email",defaultValue:o,ref:this.email,onChange:
this.handleEmailChange,placeholder:"apollo@gmail.com"}),d.a.createElement("div",{className:"invalid-feedback"
},this.getHospitalEmailError(l))))):d.a.createElement(Dn,{infoData:a})))))}}]),a}(s.Component),Un={
updateHospitalInfo:function(e,t,a){var n=a.SuccessCallback,i=a.FailureCallback;return function(a){var l,r,s;a
(ve()),a({type:null===o||void 0===o?void 0:Qe}),ue("".concat(null===se||void 0===se||null===(l=se.
UpdateHospitalInfo)||void 0===l?void 0:l.endpoint,"/").concat(e),t,null===se||void 0===se||null===(r=se.
UpdateHospitalInfo)||void 0===r?void 0:r.header,null===se||void 0===se||null===(s=se.UpdateHospitalInfo)||
void 0===s?void 0:s.method,{SuccessCallback:function(e){var t=(null===e||void 0===e?void 0:e.data).data.
```

Advisory Request Response

Pretty Raw Hex Render

```
===(null===(t=e.data)||void 0===t?void 0:t.status))if(null===e||void 0===e||null===(i=e.data)||void 0===i||
null===(o=i.data)||void 0===o||null===(l=o.result)||void 0===l?void 0:l.hospitalId){var c,u,v=null===e||void
0===e||null===(c=e.data)||void 0===c||null===(u=c.data)||void 0===u?void 0:u.result,m=null===v||void 0===v?
void 0:v.hospitalCode,A=null===v||void 0===v?void 0:v.hospitalId,p=null===v||void 0===v?void 0:v.hospitalName
,h=(null===v||void 0===v?void 0:v.serviceRequestEmail)?null===v||void 0===v?void 0:v.serviceRequestEmail:
"smartmedic@stryker.com",E=(null===v||void 0===v?void 0:v.serviceRequestNumber)?null===v||void 0===v?void 0:v
.serviceRequestNumber:"+91 931 959 4185",b=null===v||void 0===v?void 0:v.email;H(null===D||void 0===D?void 0:
D.HOSPITALID,A),H(null===D||void 0===D?void 0:D.HOSPITALNAME,p),H(null===D||void 0===D?void 0:D.EMAIL,b),H(
null===D||void 0===D?void 0:D.SERVICEREQUESTEMAIL,h),H(null===D||void 0===D?void 0:D.SERVICEREQUESTNUMBER,E),
H(null===D||void 0===D?void 0:D.ISAUTHENTICATED,JSON.stringify(!0));var g={hospitalId:A,hospitalName:p,
hospitalCode:m};n.props.localStorageValue(g),a(),n.props.history.replace("/dashboard")}else n.setState({
```

5.7 Robots.txt file

Severity: Information
Confidence: Certain
Host: https://admin.smartmedic-testing.com
Path: /robots.txt

Issue details:
The web server contains a robots.txt file.

Issue background:
The file robots.txt is used to give instructions to web robots, such as search engine crawlers, about locations within the web site that robots are allowed, or not allowed, to crawl and index.

The presence of the robots.txt does not in itself present any kind of security vulnerability. However, it is often used to identify restricted or private areas of a site's contents. The information in the file may therefore help an attacker to map out the site's contents, especially if some of the locations identified are not linked from elsewhere in the site. If the application relies on robots.txt to protect access to these areas, and does not enforce proper access control over them, then this presents a serious vulnerability.

Issue remediation
The robots.txt file is not itself a security threat, and its correct use can represent good practice for non-security reasons. You should not assume that all web robots will honor the file's instructions. Rather, assume that attackers will pay close attention to any locations identified in the file. Do not rely on robots.txt to provide any kind of protection over unauthorized access.

References:
- Web Security Academy: Information disclosure

Vulnerability classifications:
- CWE-200: Information Exposure

Advisory Request Response
Pretty Raw Hex

```
1 GET /robots.txt HTTP/1.1
2 Host: admin.smartmedic-testing.com
3 Accept-Encoding: gzip, deflate
4 Accept: */*
5 Accept-Language: en-US;q=0.9,en;q=0.8
6 User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko)
  Chrome/102.0.5005.63 Safari/537.36
7 Connection: close
8 Cache-Control: max-age=0
9
```

Advisory Request Response

Pretty Raw Hex Render

```
1  HTTP/1.1 200 OK
2  Content-Length: 67
3  Connection: close
4  Content-Type: text/plain
5  Date: Mon, 20 Jun 2022 13:31:48 GMT
6  Server: Microsoft-IIS/10.0
7  Accept-Ranges: bytes
8  Cache-Control: no-cache, no-store, must-revalidate, pre-check=0, post-check=0, max-age=0, s-maxage=0
9  ETag: "0d30a9ef81d81:0"
10 Expires: 0
11 Last-Modified: Fri, 17 Jun 2022 02:12:14 GMT
12 Pragma: no-cache
13 Set-Cookie: ARRAffinity=c02bd95f6de966f537132af58810d7960a1880e2261379fc4d49dd59e700e546;
   Path=/;HttpOnly;Secure;Domain=admin.smartmedic-testing.com
14 Set-Cookie: ARRAffinitySameSite=c02bd95f6de966f537132af58810d7960a1880e2261379fc4d49dd59e700e546;
   Path=/;HttpOnly;SameSite=None;Secure;Domain=admin.smartmedic-testing.com
15 Vary: Accept-Encoding
16 X-Powered-By: ASP.NET
17
18 # https://www.robotstxt.org/robotstxt.html
19 User-agent: *
20 Disallow:
21
```

5.8 Open Ports information gathered

Severity: Information
Confidence: Certain
Host: https://admin.smartmedic-testing.com
https://smartmedic-testing.com
Path: /

Issue details:
Open Ports information gathered,

Issue background:
Open ports become dangerous when legitimate services are exploited through security vulnerabilities or malicious services are introduced to a system via malware or social engineering, cybercriminals can use these services in conjunction with open ports to gain unauthorized access to sensitive data.

In security parlance, the term open port is used to mean a TCP or UDP port number that is configured to accept packets. In contrast, a port which rejects connections or ignores all packets directed at it is called a closed port.

To run an exploit, an attacker needs a vulnerability. To fingerprint a service, the attacker needs to know that there is one running on a publicly accessible port. To find out which publicly accessible ports run services, the attacker needs to run a port scan.

Although you do require ports to be open for users to connect to your services, you should restrict open ports, and ports exposed on the Internet to these services only.

Open ports allow attacker to:

- Configure the service to distribute content: Unused services tend to be left with default configurations, which are not always secure or may be using default passwords.
- Exploit old versions of unused software: Unused services tend to be forgotten, which means that they not get updated. Old versions of software tend to be full of known vulnerabilities.
- Gain better information on your network: Some services give an attacker easy access to certain information, at the very least, they can have a very good guess on the operating system that the server is running, which is already a good head start.

References:

- Web Security Academy: Information disclosure
- https://docs.microsoft.com/en-us/azure/app-service/environment/app-service-app-service-environment-control-inbound-traffic
- https://social.msdn.microsoft.com/Forums/en-US/5a4c97bc-a3b5-456f-ae02-dfd7cdcc1caf/is-it-mandatory-to-close-1221-port?forum=azureappconfiguration

Vulnerability classifications:

- CWE-200: Information Exposure

```
80/tcp  open  http?
443/tcp open  ssl/https?
443/tcp open  ssl/https Microsoft-IIS/10.0
454/tcp  open  ssl/upnp   Microsoft IIS httpd
1221/tcp open  http      Microsoft HTTPAPI httpd 2.0 (SSDP/UPnP)
4022/tcp open  dnox?
4024/tcp open  tnp1-port?
8172/tcp open  ssl/http   Microsoft IIS httpd 10.0

PORT    STATE SERVICE   VERSION
80/tcp  open  http
443/tcp open  ssl/https Microsoft-IIS/10.0
454/tcp  open  ssl/upnp   Microsoft IIS httpd
| ssl-cert: Subject: commonName=waws-prod-sg1-
069.api.azurewebsites.windows.net/organizationName=Microsoft
Corporation/stateOrProvinceName=Washington/countryName=US
| Subject Alternative Name: DNS:waws-prod-sg1-069.api.azurewebsites.windows.net
| Issuer: commonName=DigiCert SHA2 Secure Server CA/organizationName=DigiCert
Inc/countryName=US
| Public Key type: rsa
| Public Key bits: 2048
| Signature Algorithm: sha256WithRSAEncryption
| Not valid before: 2022-07-02T00:00:00
| Not valid after:  2023-07-02T23:59:59
| MD5:   f9b7 6b14 d410 9d51 943f d54d 3f0a 2cd9
|_SHA-1: a69f 7292 82b7 16c0 709b b27e bace 85d0 4984 1d92
| tls-alpn:
|   h2
```

```
|_  http/1.1
|_ssl-date: 2022-08-02T16:21:46+00:00; 0s from scanner time.
1221/tcp open  http      Microsoft HTTPAPI httpd 2.0 (SSDP/UPnP)
|_http-favicon: Unknown favicon MD5: AD117D22DD5CA3E20E71E08A225E4121
|_http-title: Site doesn't have a title (text/plain).
|_http-trane-info: Problem with XML parsing of /evox/about
| http-methods:
|_  Supported Methods: GET HEAD POST OPTIONS
|_http-server-header: Microsoft-HTTPAPI/2.0
4022/tcp open  dnox?
4024/tcp open  tnp1-port?
8172/tcp open  ssl/http   Microsoft IIS httpd 10.0
|_http-title: Site doesn't have a title (text/html).
| tls-alpn:
|   h2
|_  http/1.1
| ssl-cert: Subject: commonName=waws-prod-sg1-
069.publish.azurewebsites.windows.net/organizationName=Microsoft
Corporation/stateOrProvinceName=Washington/countryName=US
| Subject Alternative Name: DNS:waws-prod-sg1-069.publish.azurewebsites.windows.net, DNS:waws-
prod-sg1-069.ftp.azurewebsites.windows.net
| Issuer: commonName=DigiCert SHA2 Secure Server CA/organizationName=DigiCert
Inc/countryName=US
| Public Key type: rsa
| Public Key bits: 2048
```

5.9 TLS certificate

Severity: Information
Confidence: Certain

Issue details:
The server presented a valid, trusted TLS certificate. This issue is purely informational. The server presented the following certificates:

Issue background:
TLS (or SSL) helps to protect the confidentiality and integrity of information in transit between the browser and server, and to provide authentication of the server's identity. To serve this purpose, the server must present an TLS certificate that is valid for the server's hostname, is issued by a trusted authority and is valid for the current date. If any one of these requirements is not met, TLS connections to the server will not provide the full protection for which TLS is designed.

```
Server certificate
Issued to:    *.azurewebsites.net, *.scm.azurewebsites.net, *.azure-mobile.net, *.scm.azure-mobile.net,
*.sso.azurewebsites.net
```

Issued by: Microsoft Azure TLS Issuing CA 01
Valid from: Tue Mar 15 00:09:55 IST 2022
Valid to: Fri Mar 10 00:09:55 IST 2023
Certificate chain #1
Issued to: Microsoft Azure TLS Issuing CA 01
Issued by: DigiCert Global Root G2
Valid from: Wed Jul 29 18:00:00 IST 2020
Valid to: Fri Jun 28 05:29:59 IST 2024
Certificate chain #2
Issued to: DigiCert Global Root G2
Issued by: DigiCert Global Root G2
Valid from: Thu Aug 01 17:30:00 IST 2013
Valid to: Fri Jan 15 17:30:00 IST 2038

Server certificate
Issued to: admin.smartmedic-testing.com
Issued by: GeoTrust Global TLS RSA4096 SHA256 2022 CA1
Valid from: Wed Jun 15 05:30:00 IST 2022
Valid to: Fri Dec 16 05:29:59 IST 2022
Certificate chain #1
Issued to: GeoTrust Global TLS RSA4096 SHA256 2022 CA1
Issued by: DigiCert Global Root CA
Valid from: Wed May 04 05:30:00 IST 2022
Valid to: Mon Nov 10 05:29:59 IST 2031
Certificate chain #2
Issued to: DigiCert Global Root CA
Issued by: DigiCert Global Root CA
Valid from: Fri Nov 10 05:30:00 IST 2006
Valid to: Mon Nov 10 05:30:00 IST 2031

Server certificate
Issued to: api.smartmedic-testing.com
Issued by: GeoTrust Global TLS RSA4096 SHA256 2022 CA1
Valid from: Thu Jun 16 05:30:00 IST 2022
Valid to: Sat Dec 17 05:29:59 IST 2022
Certificate chain #1
Issued to: GeoTrust Global TLS RSA4096 SHA256 2022 CA1
Issued by: DigiCert Global Root CA
Valid from: Wed May 04 05:30:00 IST 2022
Valid to: Mon Nov 10 05:29:59 IST 2031
Certificate chain #2
Issued to: DigiCert Global Root CA
Issued by: DigiCert Global Root CA
Valid from: Fri Nov 10 05:30:00 IST 2006
Valid to: Mon Nov 10 05:30:00 IST 2031

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